

Learning through Art



eklavya

Jane Sahi & Roshan Sahi

Learning Through Art

A RESOURCE BOOK
FOR PRIMARY SCHOOL TEACHERS

Jane Sahi and Roshan Sahi



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Jane Sahi

Bangalore, 2008

Preface

This book aims at helping teachers to integrate art activities into school life as it provides children with opportunities to express feelings, explore ideas, record observations and have a direct experience of materials and handling tools. Art is perceived here as an active way of learning and sharing and not as something additional to the normal curriculum. The activities are designed to include all children and enrich regular lessons of language, math and environmental studies.

In this book art has been given a much broader definition than the one that is commonly used. Hence the inclusion of games, stories and observational exercises alongside the more conventional art activities of drawing and painting. Dance, drama and music complete the experience of art, but have not been specifically touched upon. Children gain experience and knowledge about the physical world directly through their senses. Therefore sensory experience has been given a central place. An invitation to children to be more aware of their senses is the beginning of many of the activities.

The first part of the book offers some guidelines about stages of development in children's art. This is followed by some practical suggestions about organisation of art activities. This includes organising materials, evaluation and display. Suggested activities under five sections – Senses, Line and colour, Art and the environment, Art and math, and Language and art – form the main part of the book. The last section provides teachers with some ideas regarding the linking of art in the curriculum and poses questions about the place of art in the school.

The activities have been set within the framework of broad subject areas with cross references to show the overlaps and connections across the curriculum. The range of suggested activities is very wide but it is hoped that this will enable the teacher to select what is practical, appropriate and useful for a particular class. Some preparatory activities have been suggested in relation to particular topics.

All the suggested activities have been tried and tested in the classroom. The book ends with a list of reference books that have been useful and from which I have drawn inspiration over a number of years. Like any teacher I have gleaned ideas from several sources and adapted, modified and extended them to suit the context of the children and the school. I hope that you would adopt these ideas, too, and change and adapt them to suit your particular situation.

There has been a conscious effort to keep in mind cutting costs by encouraging the use of natural and waste materials. There are a number of suggested activities that require no specially bought materials. However, it is hoped that some provision would be made to allow children to enjoy the experience of painting and crayoning with colour.

Jane Sahi
Bangalore, 2008



Growth of the child through art

All young children learning to roll, crawl, stand and walk follow a similar pattern all over the world but each child within a particular culture finds his or her own way and pace to master mobility. Similarly, young children gradually find ways to give meaning to sounds through a shared language.

Children between two and six years also discover a visual language made up of dots, dashes, vertical and horizontal lines, loops and spirals. These markings are the beginning of pattern-making and drawing and give a visual form to thoughts, feelings and impressions.

Here are some examples of children's first drawings.



Loops



Dots and dashes



Vertical lines



Horizontal curves



Criss-cross lines

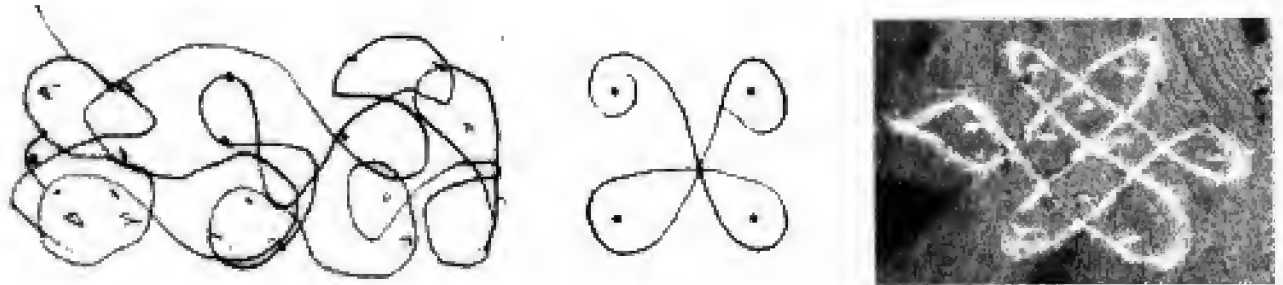


Spirals and circles

These first markings are combined and repeated to make more complex patterns including criss-cross patterns and circles with horizontal and vertical lines. The overlaid loops are then simplified to form a single shape like a circle. A cross form is also often drawn.

2 Learning through art

The drawings often show movements of going round, up and down and going through. Sometimes these drawings resemble *rangolis*.

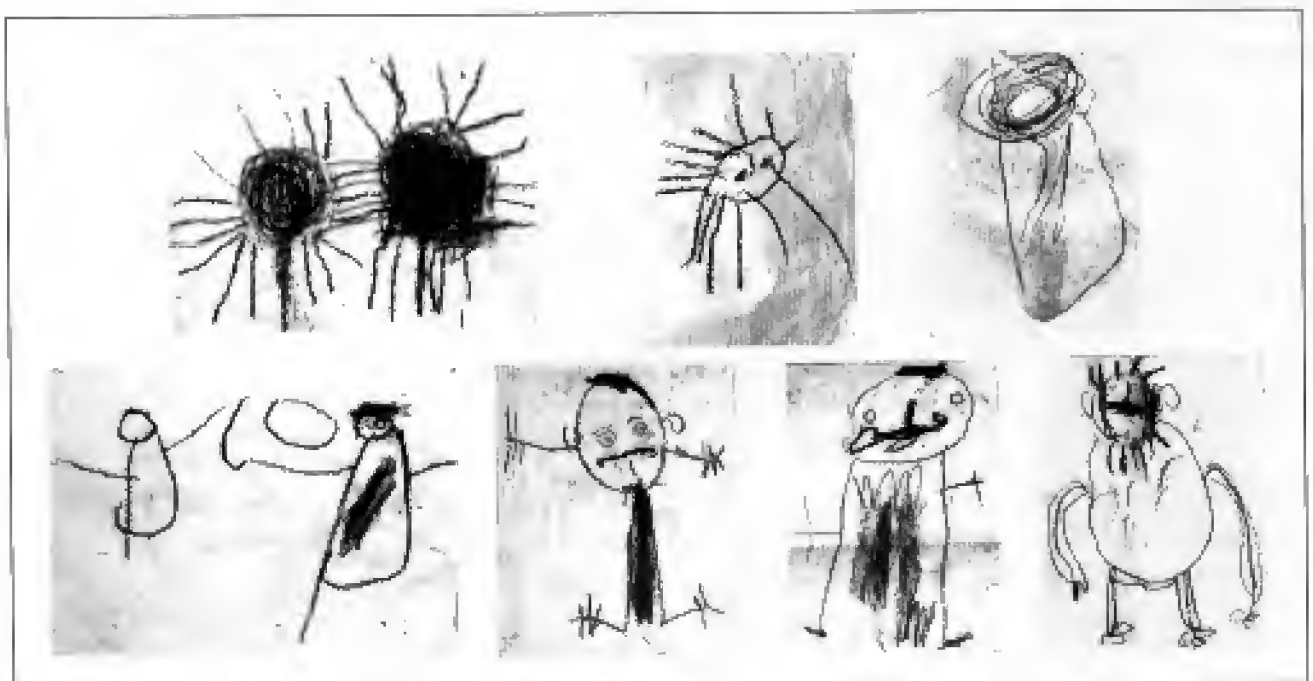


Between the ages of 2 to 6 years, children usually begin to give a name to the pictures that they have drawn. At first the pictures may not look very different from the earlier drawings. But for the child the act of drawing and describing what has been drawn is a significant step.



A four-year-old child described this picture as a frog

The human body is often the first thing a child represents. Sometimes the loops and spirals become a closed shape which, for the child, represents the human person. The head looks like the sun and the rays become the legs and arms. The rays often look like the antennae of an insect reaching out to touch and sense the world around.



Sometimes the human figure seems to develop from the criss-cross of the horizontal and vertical lines. The rays from the head are often reduced to two vertical lines which look like the trunk of a tree.



With infinite variety, the child fills in the figure by joining the trunk with a horizontal line. At times the two circles become the head and the body. Straight lines or loops, coming at first from the head or from the body, become the arms and legs.



Gradually the child begins to find ways of expressing movement and different postures such as carrying, bending and sitting.



Children's first pictures of trees are not based on close observation but rather depict the experience of the largeness, exuberance and growth of the tree. Young children use colour to convey feeling and mood. They are unaffected by the convention that assumes that the sky is blue, trees are green or the sun is yellow. Children should be free to use colour as they see and experience it.



A child's first pictures are often disconnected units but as the child weaves a story into the picture, she explores ways of showing relationships.



Note: See Appendix I for further discussion.

Planning and organising

Planning a curriculum

The teacher's role

Selection of activities

Materials

Storage

Space and time

Classroom organisation

Evaluation

Display and sharing

Planning a curriculum

The activities covered in this book need not be carried out in the order given here. It is recommended that the chapter on the senses should be the basis for introductory activities for the youngest children. However, within each section there is a progression and activities build on and extend each other. We have made an effort to indicate skills or knowledge required for particular activities and ways in which they can be extended. Hence, there are guidelines of how to build up a sequence of activities.

The ideas are meant as a resource for teachers to use in relation to the work they are doing within the curriculum whether in environmental studies, math or language classes.

The chapters on the senses and line and colour are in a way basic to all the activities and can be introduced as part of the art class. The sections on the elements and materials could either be integrated into the appropriate lessons or should complement environmental studies in the art class.

The sections on patterns and shapes could form one of the math lessons every week and be followed through as suggested in the book.

The activities outlined in the chapter on language could be integrated and adapted to fit in with the language work so that the stories given in the textbook are extended through art activities whether in drama or through illustration. The ideas about making and illustrating the children's own stories and the sharing of news would greatly enrich the children's active and meaningful usage of language.

Note that the activities have been marked with asterisks according to the level of difficulty:

- * Four to five years and above.
- ** Six to seven years and above.
- *** Eight to ten years and above.

This does not mean that the activity can be done only by children of a specific age group. Many of the activities can be adapted and extended to meet the needs of older children.

The teacher's role

The following list outlines the teacher's responsibility in setting up a framework whereby children can work with freedom and care:

- To set up a long-term plan that includes a range of possibilities with materials, techniques and themes that is appropriate for the age, ability and experience of the children.
- To select activities that children can work on independently with minimum adult support.
- To organise the storage and distribution of materials with the help of children.
- To provide a framework for an activity, and introduce, clearly explain and discuss with children its purpose while allowing for a variety of responses.
- To include, support and encourage all the children in the class.
- To provide time to clean up at the end of the class.
- To evaluate and record children's work.
- To arrange appropriate displays or share the children's work within the classroom or elsewhere in the school, using spaces inside or outside.
- To plan how to extend and build on the lesson and relate it to other areas of learning such as language, math or environmental studies.



Working with bangle pieces on the floor

Selection of activities

For children below six years

Children below the age of six benefit from being in close touch with a rich sensory environment. This can be supported, encouraged and guided by a teacher who provides a space where children can be actively involved in touching, listening, seeing, moving and manipulating materials, especially natural materials. Asking probing questions that help children delve more deeply into what is familiar and answering their questions helps them to be more attentive and to look closely at their experience of the world.

Young children need plenty of space and time to explore and experiment with tools and materials. They need support and practice to acquire skills in using a pencil or brush, and in tearing, cutting, folding and pasting.

In addition to many of the activities suggested in the section on the senses, the following could be introduced:

- ♦ Exploring threads and stitching
- ♦ Paper work – tearing, cutting, folding and pasting
- ♦ Matching and comparing activities
- ♦ Patterns with numbers
- ♦ Patterns and shape
- ♦ Sharing experience
- ♦ Responding to stories
- ♦ The making of stories
- ♦ Number stories
- ♦ Pre-writing exercises using natural materials
- ♦ Patterns and writing



Sharing news

For children above six years

Gradually the child becomes more proficient in using materials and expressing ideas in pictures. At this stage the teacher's role changes and she can begin giving more suggestions for topics to draw. The teacher can also introduce new techniques such as printing methods and collage.

Activities that require more detailed observation are more appropriate for older children. Such exercises include the detailed drawings of particular trees (p. 78), the drawing of each other's poses (p.35), and the exercises related to practice in observation (p. 137). Also exercises that demand more accuracy and technical skill, such as some of the work with symmetry and tessellations, are better suited to older children.

Materials

It is not necessary to have a wide range of costly materials to produce imaginative art. In the past different communities have worked with limited choice of colours, materials and techniques but have nevertheless created a rich visual tradition.

People have always used what is at hand, such as the ivory from the seal, the bone of a dead animal, tree bark, locally available wood or stone, to make tools and artefacts. Today, in addition to traditionally used materials, a variety of new materials like wire, plastics and nylon, used along with man-made objects, can provide a stimulus for imaginative and experimental work.

Through the exploration of a wide range of media and tools, children gain control of a variety of techniques and learn both the limitations and the rich possibilities of different materials.

Natural materials

Seeds	Seed pods	Feathers	Shells	Leaves	Wood shavings
Sand	Charcoal	Clay	Straw	Sticks	Bark

Waste materials

- One-sided paper (i.e. paper used on one side, the other side being blank)
- Newspapers and magazines
- Covers from used notebooks
- Cards, matchboxes, cardboard boxes of all sizes
- String, thread, wool, ribbons
- Fabric pieces from the tailor
- Wood pieces, shavings and sawdust from a sawmill
- Sweet wrappers
- Silver paper from cigarette packers, tea packets etc.
- Matting and sacking
- Bus tickers, theatre tickets
- Wedding cards, invitations

Everyday materials

Rubber bands	Toothpicks	Buttons	Bangles
Beads	Wire	Paper bags	Straws

Bought materials

Paper

Large sheets of bleached newsprint can be bought and cut into different sizes. Children can work not only with rectangular pieces of many different proportions but with square or circular shaped paper. Rectangular strips can be used horizontally or vertically. Sometimes a very small piece of paper can be used, for example, to fit into the folded picture frame (see p. 93).

Papers with very different surfaces can be used, for example, corrugated card produces a variety of effects. A roll of paper could be used to make a mural and it is cheaper and easier to use than sticking paper together. Newsprint can be used for practice and some activities. Two or even three or four sheets of newspaper can be stuck together with *maida* paste to form a strong base to make friezes or charts. Kite/tissue paper comes in many colours and can be used effectively as a background to a display and for other purposes.



Paint in used plastic containers and brushes



Variety of wood shavings in plastic bags



Layers of newspaper stitched to provide a surface for drawing on

Brushes

A variety of brushes differing in thickness and quality should be available. In addition to artists' brushes, cheap thicker brushes from a hardware store can be bought for occasional use. Also very fine brushes could be used when required. Brushes can be made from bamboo or other natural materials. Other kinds of tools for applying paint such as toothbrushes, sponges, old combs, flat spoons and rollers can also be used. If thick paint is used mixed with *maida* paste, finger painting can be done.

Paints

Powdered paint can be bought by weight and mixed with gum arabic as required. A wider range of cheap colours is sometimes available as powder at the time of Holi but it is important to check that the colour is not permanent or toxic. In addition, various oxides (red, yellow and blue) are cheap and produce a range of colours. Natural colours and dyes can also be used (see pp. 79, 156).

Crayons

Wax crayons are very suitable for colouring and provide a richer range of colours than pencil crayons. Oil pastels can also be used but these are more expensive. If these are used in books, it is advisable to give a thin wash of *fericol* diluted with water to prevent smudging. White and coloured chalk and charcoal are also useful for sketching bold outlines before painting a picture or doing pattern work. Felt pens are costly to use but can be used for particular purposes such as drawing an outline, special writing or labelling. Coloured pencils are expensive and do not give the bright, bold effect of wax crayons or oil pastels but they do allow children to be precise and add details to their work.

Scissors

It is important for children to have scissors that are the right size. Scissors should be sharp but not pointed. A set of scissors could be kept for use in a container and used for different classes.

Paste and gum

***Maida/atta* paste**

The cheapest form of paste is wheat flour. It should be sifted and mixed gradually with water so that lumps do not form. The mixture should be of the consistency of thin cream. This should be gently heated. The mixture should be stirred continuously until it thickens and then cooled. To avoid rats or insects eating it, salt or a mild disinfectant such as lemon grass oil can be added. Alternatively, borax powder can be added. It should be noted that this paste must be used immediately.

Gum arabic

Gum arabic can be bought and boiled with water. It can then be strained and stored in a sealed container for use as required. This is particularly useful for adding to powder paint to thicken it and to prevent the paint from flaking.

Ready-made gum and paste can also be bought. There are cheaper forms of adhesive such as PVC, *fericol* or artificial resins such as *Bull Bond* (available in plastic bags). These can be diluted with water for some activities. It is very important to keep this gum in a sealed container; otherwise it is wasted as it hardens if left open. It is also important to wash brushes immediately if they have been used for applying gum or else the brush hardens and cannot be used again.

It is more economical to buy larger quantities of gum but it is advisable to distribute small quantities in lids or small containers such as small plastic bowls to be used as needed.

Storage

Materials should be protected from damage (rats, white ants and rain are the most likely sources of damage) and yet be easily accessible. Efficient storage of materials helps save time, energy and money.

Cardboard boxes of a variety of sizes, shoe boxes, plastic trays and boxes, tins and plastic bottles can be used and stored either on open shelves or shelves constructed with bricks and boards. Boxes can sometimes be reinforced by two or three layers of newspaper pieces and *mukka* paste and then painted. Provide separate containers for as many items as possible and label them.

Materials should be stored at a height that is accessible to children, so that they can help in adding to the collection of such things as waste materials. Children could also help in the distribution, care and storage of materials.

Materials may have to be shared among different classes, so they should be in containers that are easily transportable. For example, paint could be kept in plastic jars with lids and placed in a tray, scissors in a box, brushes in a tin, etc.

Large sheets of paper can be kept in a wide shelf made, possibly, from an old blackboard with layers of bricks to separate different kinds of paper. Waste materials such as bits of paper, tissue paper, crepe paper, coloured card, brown paper etc. can be kept separately in plastic bags. One-sided used paper can be kept in a plastic tray.



Low, open shelf for easy access



Tin trunk for valuable materials

Space and time

A number of the activities that have been suggested are best carried out on the ground, for example, on the floor of a veranda, if it is difficult to shift desks in the classroom. It is also helpful to provide the children with drawing boards (A4 clip boards that are generally used for examination purposes or hardboard cut into appropriate sizes). A newspaper folded and loosely stitched could also provide a firmer surface to work on.

One of the ways of evaluating children's artwork is the level of engagement and concentration they show, and so it is essential that children are given time to focus on their work. If possible the timetable should be arranged so that a double period can be given or a class that is before a break, so that children can have the choice of continuing work.

Some art activities could be incorporated in the lessons when they relate to the topic which is currently being studied, for example, work on plants or shapes or symmetry. Other activities such as stitching or clay work could be part of the art classes. It is important that children have a sense of continuity and are able to finish work once started without undue delays.

Sometimes work can be given as homework so that children can work at their own speed and level of interest.

Classroom organisation

Some of the activities suggested are clearly intended for individual work. Others are for children to work at separately but each contributing to a whole. For example, when each child illustrates different sections of a story and those pictures are finally put together to make a scroll. Children might also contribute a picture to make a mural, on the theme of "the garden" or "the night" etc. Other examples of children working together to contribute to a single outcome might be making clay models to produce a scene of the forest or different shapes to make a mobile. There are also activities where children share their abilities and skills to perform a task, for example, the paper mosaic work or some of the larger scale papier-maché work. Some activities are best done in pairs or small groups and this has been indicated in the text.



Clay work on a veranda

Evaluation

The teacher should be attentive to signs of children's growth by looking at their pictures. However, it is essential that the teacher's comments should be constructive and supportive and not mocking, dismissive or negative. Below are some guidelines to assess children's pictures, but it is important to stress that the process and the level of engagement is of great significance and that different children mature in different ways.

Three to six years

Expression

- Is the child confident to use the whole sheet of paper? (Note that some children may prefer to work with smaller areas and in greater detail while others may like to work on a larger scale.)
- Is the child able to describe and give a name to what has been drawn?
- Does the child draw simple geometric figures? (For example, a closed circle and radii to represent a person.)
- Does the child draw separate but connected shapes and relate different objects and figures in a picture?
- Is the child ready to describe the picture or tell the story of the picture?
- Does the child include details in the drawing? For example, are human figures given elaborate features?
- Does the child indicate an inside and outside, for example, in the drawing of a house?
- Does the child vary the subjects of his or her drawings?

Competency

- Does the child have control over the tools (pencil, crayon, brush, paint) she is using?
- Is the use of colour random or chosen? Does the child mix colours?
- Is the child able to tear, cut, paste, fold paper?

Social and emotional aspects

- Is the child willing to work independently?
- Is the child able to concentrate on a picture?
- Does the child enjoy drawing?
- Does the child work with care?
- Does the child complete a task?



Six years and above

Expression

- ♦ Are there signs of more attention to details and distinctive features of trees, people and animals?
- ♦ Is there a sense of linking ideas and images to make a whole and interrelated composition?
- ♦ Is the child willing to explore new topics and respond to different themes?

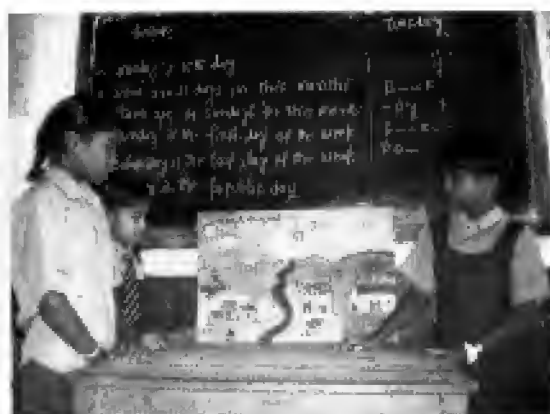
Competency in handling tools and materials

- Does the child use textures and lines in an interesting way?
- Is there a readiness to experiment and work with different media or explore new techniques such as printing?
- Is the child able to stitch independently? What skills have been acquired through stitching activities?
- Is the child able to manipulate clay – to roll, shape and coil the material?

Social and emotional aspects

- ♦ Does the child work in an imaginative and personal way?
- ♦ Is the child able to work cooperatively in a group?
- ♦ Is the child ready to share artwork with others and to appreciate and listen to others who share?

A record of each child's work can be made by keeping a few representative pictures from each term, by observation during the activities, and then making an assessment by looking at the above areas: expression, competency and the social and emotional aspects.



Sharing each others' work



Fully engaged in an activity

Display and sharing

An important aspect of display is to make the classroom attractive and pleasant to be in but this is not the only reason for having displays and exhibitions. Pictures are also a form of communication, so it is important for children to be able to share their work and to appreciate the work of others.

The work might serve to stimulate the interest of the children both within the class and with other classes. Sometimes the art work can be specifically related to their learning so that through observation, questioning and investigation, children are enabled to increase their understanding.

All children should at some time have their work displayed and not only children who seem to be particularly gifted. Care should be taken to choose work that has been done with interest, imagination and thought. Work that is done in groups, such as murals or paper mosaic work, can be used to decorate the room in the form of a frieze or mural.



Display and selection of designs of book covers

Practical suggestions

- Display areas should not be overcrowded.
- Work should usually be accompanied by labels to explain the work and to carry the name of the child who has done it.
- Care should be taken to arrange the work so that the lettering and pictures are visually interesting.
- Ensure that the work on display is frequently changed and not left hanging till it becomes dusty, torn and faded.
- There should be space given both for children's own work and for printed pictures.
- Materials that are hung should not interfere with movement in the classroom.
- The floor, doors, windows and cupboard doors can also be used for displaying pictures.

Exhibitions and display areas

Different levels can be created by using large cardboard boxes and covering them with plain cloth or paper. Sometimes the objects can be placed on a background of pictures to combine both two- and three-dimensional aspects. The objects should be placed at a height where children can touch and handle them. Labels can be made by folding a card horizontally in half so that it can stand firmly.

Children can be involved in selecting, adding to, and changing the objects displayed. For example, if the theme is unusual shapes, the children can look around in the immediate environment for possible objects to illustrate this theme.

The teacher may begin a display by arranging three or four artefacts made of one particular material such as wood and then children can add objects brought from home.

The exhibition area should not be a static, dusty, ignored area but rather the teacher can use it to arouse curiosity and stimulate investigation by asking the children to sort and classify the objects, describe or compare them, draw or write about them. Questions about objects might be: How was it made? Who uses it? How does it work? The same objects can be covered and used for playing a memory game.



Display of different natural shapes and patterns

Senses

Sensory experience

Taste

Touch

Ways of seeing

Sound and the sense of language

Smell

Word, thought and image

Movement and balance

Awareness of time



An essential aspect of art is our response to the natural and man-made world around us. It is through our senses that we experience our environment most directly.

Children deprived of active involvement in their environment through their senses are like children who are malnourished. Young children need the stimulus and challenge of sensory experience to learn and to grow in awareness.

These exercises, unlike the sensorial materials suggested by Montessori, are directly related to the surrounding and familiar world of the children and while some of the activities take place in the classroom, others involve looking outside and linking experiences at home with school learning.

The exercises also should supplement a stimulating environment in the classroom and the outside area of the school. Children should have the space and time to have a practical and creative experience of the physical world in a natural and unself-conscious way. The exercises suggested here highlight and extend this growth in awareness.

Sensory experience

Purpose

These exercises help children become aware of their relation to their physical and sensory experience. They help them to activate their bodies in a thoughtful way and encourage concentration in all areas of work.

Materials and preparation

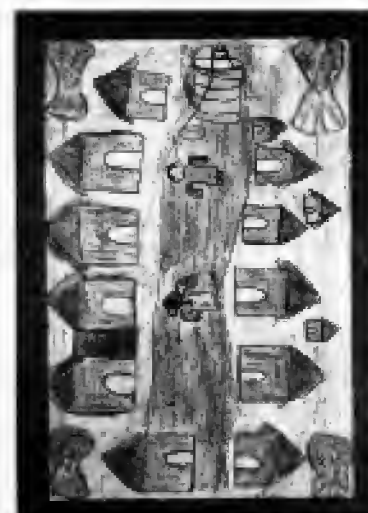
No materials are required but planning should be done so that there is a clear focus to the lesson, thus ensuring that the teacher builds on and extends the previous lessons.

Space and time needed

A period of observation and discussion would require 30-45 minutes. The walk could be arranged in the school compound or somewhere nearby.

Questions for discussion

- How do we know about the world?
- How do you know the way from home to school? (This could lead to the beginning of pictorial map work.)
- Do you see and hear the same things every day?
- Did you see anything special on the way to school today?
- What are the different things you see in the morning when you come to school and the things you see when you go home in the afternoon?



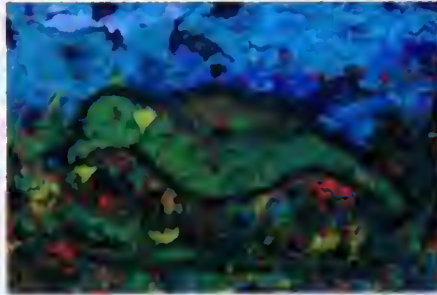
A pictorial map of the way from home to school

Activities

1. The children are divided into five groups. Each group is given a task to concentrate on one sense: seeing, listening, touching, smelling, looking at movement (leaves, ants, clouds, etc.). They are told that they are going for a walk near the school and that each group will share what they saw or heard when they return. Ask the children to try and remember the things they observed in the order that they observed them.*
2. Sometimes it is helpful to give the children a very specific task when going on a walk. For example:
 - What things can you hear but can't see?
 - Look for things that are very quiet and still.
 - What do you see on the ground?
 - What round things can you see?
 - A walk looking at patterns, man-made and in nature.
 - Finding rough and smooth things.
 - What things can you see but can't touch?***
3. Groups of children are directed to different locations in the school campus, for example under a tree, near the kitchen. The children then write down what they can see, hear, smell, etc. Later these findings can be presented to the whole class.



Beginning of map-making



Collages with different materials



Taste

Purpose

We use our sense of taste to recognise flavours and learn about the world. Taste is possibly the strongest sense for a newborn baby. A small baby learns about the world by tasting everything possible.

Children are introduced to the idea that tastes differ and that there is a great deal of diversity in the taste and eating habits in different communities. There is no right or wrong answers about tastes we like. Our tastes are formed by what we are used to and what is available. It is also important for children to realise that everything should not be tasted and that some substances are harmful or poisonous.

Materials and preparation

Neem leaves, tamarind and small pieces of jaggery should be prepared ahead of the class and kept in clean containers.

If a visit to the school kitchen is planned, then some planning about timing and convenience should be discussed with the people concerned.

Vocabulary

Sweet, sour, salty, bitter, soft, smooth, lumpy, hard, juicy, tasty, chewy, gritty.

Space and time

Within the classroom.

Questions for discussion

- Which tastes do you like or do not like?
- What is your favourite meal? What is the worst meal you could think of?
- Does everyone like the same tastes?
- What things have a bitter taste?
- What kind of taste does tamarind have? Is it bitter? Or does it have some other taste?
- Which fruits are sour and which fruits are sweet?
- What happens if we taste something and hold our noses?
- Do all medicines taste bad?
- With what part of our body do we taste? (Children could look at a partner's tongue and be asked to share their impressions. The taste buds could be pointed out.)
- What other function do our tongues have?
- What things should we not taste? Why?

Introductory activity

The teacher could introduce the lesson by giving each child a neem leaf followed by a small piece of jaggery and use this experience as a basis for discussion about different tastes. (Some children may be familiar with the idea of sour and sweet things made during festivals etc.)*

Related activities

Awareness of the ways we smell (see p. 31).

Fire: The story of "How cooking began" (see pp. 71-3).

Touch

Purpose

The following activities are to heighten children's sense of touch and body awareness. The activities help children to explore the textures of a variety of familiar materials.

Vocabulary

Touch, feel, rough, smooth, cold, slippery, hard, soft, dry, wet, sharp, bristly, blunt, spongy, pointed, tickly, coarse, silky, fine.

Space and time

Open space.

30 - 45 minutes.

Questions for discussion

- How do different things feel when we touch them?
- What do you like to touch? Why?
- What are the things that you don't like to touch? Why?
- What things are dangerous to touch?
- Which things do we have to touch with great care?
- Why is it important for us to feel the things we touch?

Activity

Introductory game

The teacher introduces the theme of touch through a game.

The children are divided into two groups and then into pairs.

Each pair is asked to run and touch something that the teacher names, which might be a specific object, e.g. a leaf of the neem tree, the stem of a flower, sand, or an object with a particular quality like something brown, something smooth, something bumpy, etc.

A variety of less obvious tasks could gradually be included.**



Exploring clay

Purpose

Clay provides a cheap malleable material that gives children a wide range of possibilities to explore shape and form. It also teaches them to develop a sensitivity to the nature of the material and to work within its limits.

Activity

The children sit outside or on a veranda. Each child has a piece of newspaper to spread out in front of her and is given a lump of clay. The teacher allows the children to play with the clay. The children can make and change forms freely. They can squeeze, roll, bend, twist or flatten the clay. They will notice that the more the clay is handled, the drier it becomes. However, if the children mix water, it will quickly become too wet to shape and handle. It is helpful to have a damp sponge for the children to moisten their hands.



The children are not expected to make anything specific or learn techniques at this stage. The process of exploring and relating to the material is more important than a final product. Before the end of the lesson, some children might like to talk about their work to each other.



The work with clay can be related to the section on Earth in this book and can lead on to thinking about the difference between mud, sand and clay.*

Additional activity: The children could discuss and make a collection of everyday things that are made of clay such as lamps, pots and statues etc. Pictures of ancient and modern clay artefacts could also be shown. If possible, arrange a visit to a nearby potter. The children could prepare for the visit by first sharing some of their questions in class.

Exploring texture

Purpose

Further activities to explore touch and increase vocabulary to describe different textures.

Materials

A collection of objects that have a wide variety of textures, for example, sandpaper of different qualities, different pieces of fabric (thrown away bits could be collected from a tailor), beads, marbles, paper and cardboard of different qualities, a range of barks and seed pods with different textures, etc. The children could add more objects to this collection.



Activities

1. The objects mentioned above are displayed and then the children discuss how to sort them. After the teacher introduces the activity by taking one example, for instance a marble, and asking the children how it feels and whether there are any other objects in the collection that feel the same, the children could continue to contribute ideas. If possible and practical, the class could be divided into groups of six to eight children. Working with similar objects, they could sort them into sets. The groups could then visit each other and discuss how each group has sorted the objects.**
2. Children could work in pairs. One child is blindfolded and the other gives objects, one by one, from a selection. These objects are to be sorted out into two categories, by touching only. For example, rough/smooth, hard/soft, rounded / pointed...**

Related activities

- Leaf or bark prints and rubbings (see p. 80).
- Collages with seeds, natural materials, cloth.
- Exploring string and thread (see pp. 86-7).
- Pattern and texture (see p. 25).
- Relationships: comparisons and matching (see p. 101).



A collage using the textures of natural materials

Pattern and texture

Purpose

The exercises help children to be more aware of the variety of textures and to develop an appropriate vocabulary to describe different surfaces: rough, smooth, uneven, fine, silky, coarse, etc.

By making rubbings the children can be in direct touch with a variety of textures.

Materials and preparation

Children could contribute over a period of time to a display of things with different and interesting textures. Such a display might include sacking, bark, a brick and matting.

They could explore the possibilities of using different surfaces to make rubbings, using both man-made and natural objects.

Pencil, chalk, crayon or charcoal could be used.

It may be necessary to tape the paper on to a vertical surface, for example the bark of a tree, so that the paper is kept in position.

Space and time

Children could make rubbings inside and outside the classroom. They could be encouraged to experiment at home.

Activities

1. Take a random collection of stones/shells and sort according to texture. These could then be used to make patterns.*



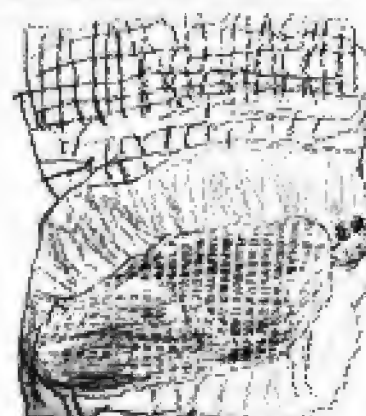
2. Making rubbings**

Using natural materials such as leaves, stones or bark, the child lays a plain piece of paper over the surface and then lightly rubs with pencil or crayon to produce different markings.

Textures in the environment can also be used, such as mats, bricks, rough walls, sacking, etc.

The rubbings can be used to make designs or pictures either by including them as a base or cutting and pasting pieces.

Children could work individually or together in small groups to make a picture.



An animal made from rubbings of different materials

Ways of seeing

Purpose

The following activities help children to be more observant within their familiar surroundings about colours, patterns and shapes and the relationship of things to each other.

Questions for discussion

- What part of the body do we use to see with?
- Look into the eyes of a friend. What do you see there?
- What stops you from seeing things?
- Do you know anyone who is blind? What would it feel like to be blind?
- Can you find your way across the room with your eyes closed?
- Where are our eyes positioned?
- Where are other animals' eyes – dogs, birds, fish, ants – positioned?

Activities

1. Introductory game

As an introduction, the children could play the game "I Spy".

"I spy with my little eye, something beginning with ..."

Or alternatively, "I spy with my little eye, something red."

Or "I spy with my little eye, something round."*

2. A memory game

Materials

Before the lesson, prepare a suitable number of interesting objects. These could be collected round a theme; for example things in the school, things in my school bag, things in the garden, things from the kitchen, etc.

A *dupatta* to cover objects.

What to do

Place 10-20 objects so that they are visible to the whole class. Ask the children to look at them for two minutes and then cover the objects with a *dupatta*. Ask the children to recall the covered objects.

Variations

This game could be varied by making a collection of an equal number of two kinds of things, e.g. big and small things, black and white things, rough and smooth things, natural and man-made things.

The children can be divided into two groups and each group can be asked to recall one of the two categories mentioned.**

Note: This can be made more challenging if the children are not told beforehand which category of things they will be asked to remember.

3. Agarland map

Working in pairs, the children are given an embroidery needle with a double thread knotted. The children go for a 10-minute walk. Each time the pairs change direction, they pick up an object such as a leaf, a piece of bark, a flower petal or a seed pod and tie it to the thread.



The order of the objects will remind the children of the route they took. The children can come together and share the information about their different journeys and possibly guess which paths were taken by different pairs.***

Looking at colour

Purpose

The children will be more observant and more specific about the colours they see and learn to notice subtle differences in colours.

Questions for discussion

- Talk about different colours and things that are associated with a particular colour; for example: purple: grapes, *jamuns*, purple brinjals, petiwinkle flowers, jacaranda flowers, and grey: grandfather's hair, an elephant, a squirrel's tail, newspaper pictures, ash.
- Think about the colours in the classroom.
Make a list of objects under colour headings. (This can be done orally if the children are not ready for independent writing activities.)
Which colour is used the most?
Is there any colour which you can't see?

Activity

A display area could be arranged focusing on natural and man-made things of a particular colour or things you can see through.

Related activities

- Shades of colours, (see p. 39).
- Natural colours from plants, (see p. 79).

Looking at patterns

Purpose

Children become aware of patterns in the environment and increase their vocabulary to describe them.

Vocabulary

Stripes, spots, patches, checks, repeat, alternate.

Questions for discussion

- What is the use of patterns?
- Which animals, birds and insects have special patterns – stripes, spots, patches?
- Looking at our clothes, how do we know that they are ours?
- What kinds of patterns do we see on clothes?
- Which people wear special clothes and uniforms for their work?

Introductory activities

The teacher could ask the children to observe examples of patterns in the classroom. The children could be taken for a short walk near the school and asked to look for patterns. They could find patterns in the building, such as brick laying patterns or patterns on the tiles, etc.

The children could be encouraged to look up and see, for example, cloud formations and patterns of birds' flight or on the ground and observe footprints or tyre marks. They could also look carefully at leaves, bark or flowers.

Where else have children seen patterns?*

Activities

1. Draw yourself and your favourite clothes. Describe the clothes. What colour are they? Do they have patterns?
2. The children could make a design for cloth using pens or crayons or a printing technique such as using string and paint, (see p.87).

It may help young children to fold the paper to make clear sections, if they are doing repeat or alternate patterns, (see below).

3. Elements of colour, shape, texture and pattern are brought together very naturally in the making of a *mandala* or *rangoli* and children could take turns in decorating a designated area on the ground either for the morning assembly or for special occasions and festivals.**

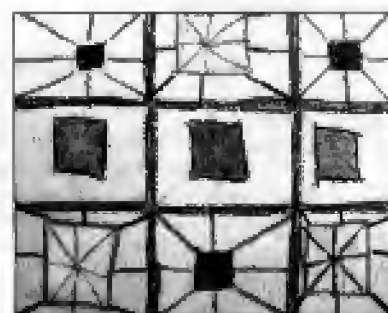
Related activities

Patterns using natural materials (see p. 85).

Pattern and writing (see p. 45).

Relationships, comparison and matching (see p. 101).

Pattern in relation to size, shape and number (see pp. 101-5).



Alternate pattern in three colours

Looking at shapes

Purpose

The activities below are to help children to become more aware of shapes, both through body movements and through familiar things in the environment. The round shape – whether of circles or of spheres – is usually the first shape that children identify.

Time

These activities could be a part of the math class over one or two weeks.

Discussion

Observe and discuss the different shapes in the classroom and the surroundings.

Activities

1. Using an outside space

The teacher asks the children, either individually or in pairs, to form their bodies into different shapes – e.g. a pencil, a ball, a flower, a house, a pot, a handkerchief, a closed bud, etc. It is important to give a lot of variety. There is no single answer and children can explore different ways of showing the same object. This could be played as a game if the teacher every so often says, “Stop!” and the children have to try to hold their positions without moving. The first to move is out.**

2. Hand and foot cut-outs

The children can work in pairs and draw round each other's hands. These shapes are cut and coloured or decorated. The cut-out hands can be used to make a joint collage, for example a tree or peacock. Alternatively the outline of the foot can be drawn and cut. These shapes can be decorated.*



Butterfly from hand cut-outs

3. Matching leaves

The children can work in pairs. Each pair is given one leaf of four to five different trees or plants in the surrounding area. The leaves should be of contrasting shapes. The children are asked to find another one to make a pair of the five different kinds of leaves.**

Related activities

Pattern and shape (see p. 104).

See the section on Shape and form.

Sound and the sense of language

Purpose

We use our hearing to recognise sounds. The exercises below are to help children become aware of the sounds that surround us. Closely related to hearing is the sense of language. Children are best exposed to the rhythms and music of the word through poetry and song.

Vocabulary

Sound, noise, hear, listen, loud, louder, high, low, musical, rattle, knock, whisper, shout, screech, howl.

Questions for discussion following a listening walk

- What did you hear?
- Did we all hear the same thing?
- Did we hear the sounds in the same way?
- Which sound do you remember most? Why?
- Which sounds were loud?
- Which sounds were soft?
- Can you think of sounds louder than the school bell?
- Can you think of sounds quieter than the ticking of a clock?
- How did you sort sounds (e.g. man-made and natural sounds, pleasant and unpleasant sounds, happy and sad sounds)?
- Which animals did you hear? Why do animals make sounds?
- Which sounds can you make with your hands?
- Which sounds can you make with your feet?

Activities

- What sounds do we hear in the classroom? Examples might include a bell, the teacher's voice, the sound of chalk on the board.*
- How are sounds different? Loud, soft, high, low, pleasant, unpleasant, frightening, happy, sad, etc.*
- The children sit in a circle and each one is asked to find a special way of saying their names.*
- The children are asked to sit quietly and still for two to three minutes. This is followed by a discussion about the sounds heard.*



Smell

Purpose

We use our sense of smell to be aware of the world. These exercises highlight what children already know and gives them a vocabulary to express the experience. The children are able to understand that each thing has its own smell. They are also introduced to the idea that some smells are harmful and dangerous.

Vocabulary

Strong, sweet, gas, rotting, fragrant.

Questions for discussion

- Do all things have a smell?
- Which part of the body do we use to smell?
- What are the smells you like? What are the smells you don't like?
- Do you have a bad memory related to certain smells?
- How do smells help us?
- Why do things that are rotting and going bad smell?
- What can you do to stop bad smells?
- Which animals are especially good at smelling?

Activities

1. A smell walk

Following the discussion on smells, the children could go for a short walk and think about smells. They could share information about the different smells they have experienced. They could collect things that smell in a pot or bag and then share them with the group.

The walk might be a starting point for a discussion about smells in nature. Why do flowers smell? Which flowers smell strongly? Do different barks and leaves have smells? Are there any bad smells in nature? Does the earth smell? Do things always smell the same? What makes smells change?

There might also be a discussion about the smell of rubbish or the pollution of vehicles.**

This could lead on to making a garden with sweet-smelling plants.

2. Guess the smell

The children could be asked to bring two objects that have a distinctive smell from home. These substances could be used to play a game by dividing the children into two groups. The children take turns to ask the other team to identify the smell and score points if the answer is correct. The link of smell with food and cooking might also be explored.

Related activities

See the section on Air and space (see pp.65-70).

Word, thought and image

Purpose

For children, image, word and gesture are very closely connected.

Young children learn best through active engagement. It is through drawing, modelling, gesture, drama, puppetry and painting that children are often best able to give shape to their thoughts and express feelings and ideas that they may not be able to verbalize. Visual language is both a means of expression for the child and a tool for communication.

Children often respond to the pictorial world of the story and understand intuitively levels of experience such as danger, fear, risk, pain and joy that they would not be able to grasp with the intellect or words alone (see p. 126).

The image becomes a visual language. It is particularly important for this time to be less structured. The teacher provides support and sometimes guidance as to how to use the materials but the child should be given maximum opportunities to make choices about the content, the colours and the composition. Instructions should be minimal and the teacher's attention should be on the process rather than the product.

Materials

Powder paint mixed with gum in small plastic jars, a tin or plastic container with clean water, small rags, large brushes, newsprint or bleached newsprint. Three or four children can share a set of four or five colours plus a container of water. Children can draw with chalk, pencils, charcoal or crayons. Newspaper or one-sided used paper can be used loosely or stitched to form a drawing book.

Note: See section on Materials, pp. 8-10.

Activities

1. Drawing

For very young children between four to five years it is not necessary to give a topic, as most children of this age, if given the opportunity, will find their own themes and subjects. It is not helpful to accelerate this period of exploration by asking the child to copy or by helping the child to draw stereotypical objects or by providing outlines for colouring in. (This may improve neatness but will not be an exercise in imagination or expression.)

Once children have passed the scribbling and the naming stages and have begun to evolve their own solutions to represent, they will be ready for more stimulus and structure to extend their skills and explore new ideas.*

2. Painting

Paint, unlike a pencil or even crayons, is more about colour than line. Paint may be difficult to organise for a large class but maybe a small group could take turns to have the opportunity to experiment with paint.

For young children it is best to provide large sheets of paper or half a sheet of newspaper and large brushes. The children will need guidance to clean their brushes each time they take a new colour and it is advisable to provide a small rag with which the children can wipe their brushes so that they do not get too wet.

Initially, children will be mostly interested in the colours and the effects of paint itself. Gradually they will learn to produce separate and overlapping patches of colour and then begin to use paint to produce representational forms and patterns. With practice and interest they will learn to control the application of colour and to include more detail in the pictures.

As in drawing in the early stages, children should be given freedom to experiment and make choices about their own work. The teacher will have to set up clear practical rules; for example, to restrict movement, to avoid accidents and the careful usage of materials.

As the child increases in skill and interest, the teacher can suggest new ways to use paint and to stimulate ideas for subjects through observation, by recalling experience, and through poems or stories.*

Note: Subjects for painting might include friends, a game, my mother's work, the garden, coming to school, a festival, etc.



3. Collage

We discussed earlier the idea of a display or exhibition, and how a collection of objects can be of interest and inspiration to children. A collage (this term was first used by modern artists about a hundred years ago) includes a process of selection, organisation and arrangement which is visual. Images may be materials or pictures that are collected and placed side by side because they have an association of some kind. It is therefore not just a random process where children are merely learning to cut and paste but one that should have an element of thought and design.

There are a number of suggestions given in this book about a theme or materials that could be used and often the children can work with a combination of materials and media. Even very young children could respond to an idea; for example, of making a collage of things they have collected on a walk or selecting images of people or shades of a particular colour.

Collage gives children a completely different media to work with and can often be done with waste materials or natural materials such as leaves, wood shavings, waste paper or cloth.

Basic skills in tearing, cutting and pasting and sometimes folding need to be practised.



Collages made from waste paper



Related activities

Wood shavings and sawdust (see p. 82).

Collages with seeds and other natural materials (see p. 85).

Movement and balance

Purpose

These exercises help children to recognise things through movement. They also heighten awareness about the way we move.

Questions for discussion

How do we move? How do different animals move? How do things move through water? How do things move through air? What things move up and down? What things turn round? What things move softly and lightly, noisily and heavily?

Activities

1. The children go for a walk and observe carefully all the things that move. They return to the classroom and share all that they can remember about what they saw move.*
2. **A game: Ways of moving**
The children form a circle and take turns moving round the circle, each one moving in a different and distinctive way; for example, hopping, moving sideways, bending, sliding, tip-toeing, etc. No one should repeat a movement.**
3. Drawing each other's poses. The children could take turns to model for each other (i.e. dance poses) and make a number of quick sketches.***



Related activities suitable for younger children

Exploring curves and straight lines in the body and through movement (see pp. 41-2).
Simple mobiles (see pp. 68-9).

Note: There is an obvious link with dance and there would be many ways that young children could be introduced to movement and dance where rhythm and balance play a vital role.

Awareness of time

Purpose

By keeping a monthly calendar with pictures, children begin to have a sense of the year and how things change and recur. The names of the days of the week and the months of the year begin to be seen in a context and have meaningful associations.

Materials and preparation

A large sheet of plain paper or newspaper painted white. Crayon and gum.

The teacher draws out a plan as shown below at the beginning of each month.

Small pieces of plain paper cut to fit the spaces.

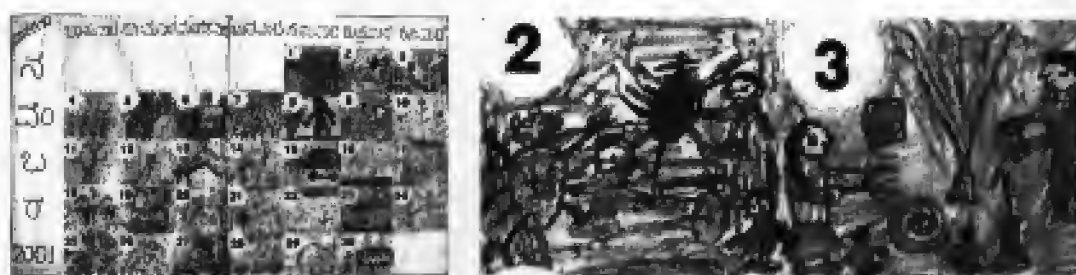
Vocabulary

Day, month, year, names of the days of the week and months of the year, seasons, names of festivals.

Activity

The teacher prepares the chart ahead of time and at the beginning of the month introduces it to the children. The chart is displayed at a height so that small children can see clearly.

Each day one child is chosen to draw something about the day before. The picture might be about some event at school or in the community; for example, the celebration of a festival or about something personal. Alternatively, it might be about the weather or some change or observation in nature. The teacher or an older child could write what the picture is about very briefly.



Celebrating Diwali in November

At the end of the month, the teacher can look back with the children to the significant events of the month.**

Additional activities

1. See note about writing diaries in the section Language and art.
2. A chart about each month could be made and the children could illustrate the significant events and changes in nature and in the community.**

Related activities

See notes on the seasons: Monsoon, Summer (see pp. 61, 74).

Visually recording the daily routine

Purpose

To help children become aware of the cycle of day and night. For the younger children, clock timings may not be appropriate but sufficient to have a sense of the rhythm and sequence of the day and night.

Materials

Paper, crayons and gum.

Vocabulary

Morning, afternoon, evening, night.

Activity

The children could each contribute a picture to make up the events of the day: getting up, morning prayer, washing the face, brushing the teeth, drinking coffee, packing the bag, going to school, etc.

The pictures could be put together on a chart and displayed on the wall, made into a stitched book or made into a scroll.**



Additional activity

For slightly older children, clock faces could be drawn for each picture to show the approximate time.

At 11 o'clock
we play games

Line and colour

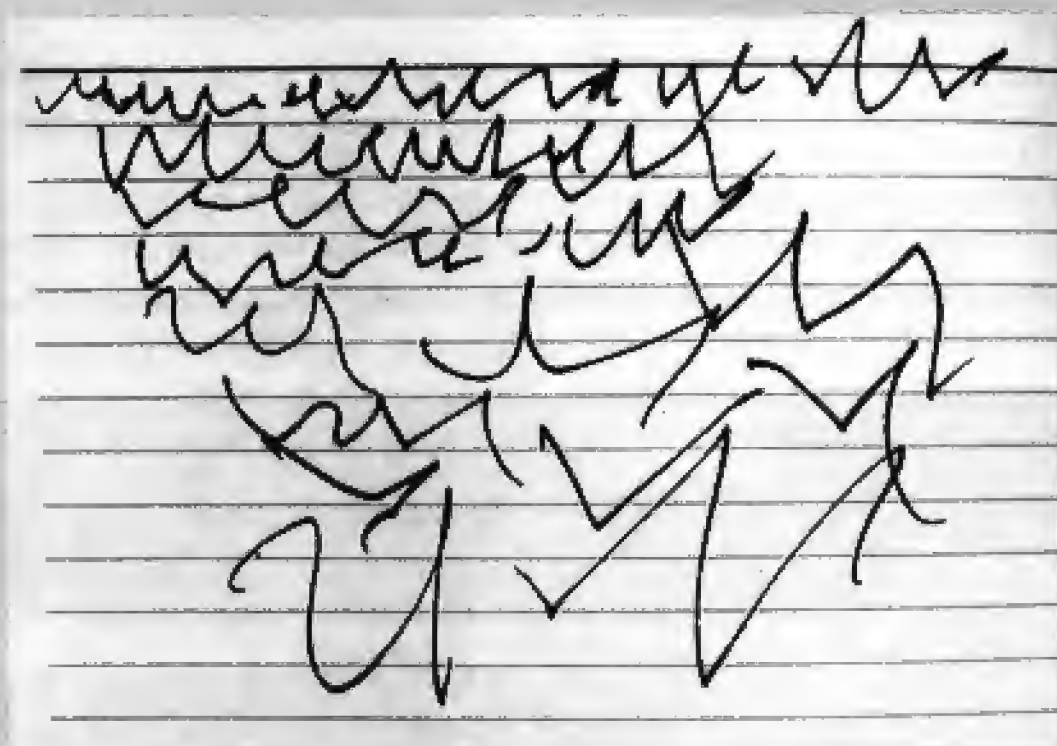
Curves and straight lines

Pre-writing exercises using natural materials

Patterns and writing

Lines and markings

Colour



A young child's imitation of writing

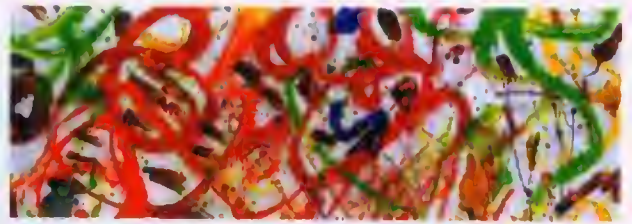
These activities include body movement, using natural materials and the more conventional tools for drawing. Pencils, crayons, chalk, charcoal, ballpoint pens and felt pens can all be used for drawing lines. There are many ways of making a line and children can be encouraged to explore the different media and the possibilities of making different markings.

The activities given below would help children discover a range of possibilities so that they can use these ideas and techniques in their own work but they should not be turned into rigid or repetitive exercises.

It is important to allow children to use colour according to their own understanding and not to insist on conventional colours, such as saying that the sky should be blue, grass green, the sun yellow, etc. However, children can be helped to become aware of the possibilities of colour and to practise how to mix different colours to obtain new shades.



Collage by sorting colours



Making shades of colour



Stitching with different coloured threads



Colour sorting of materials

Curves and straight lines

Purpose

The child begins to become aware that the body, the whole of nature, and drawing and writing are made up of curves and straight lines.

Materials and preparation

Thick string to make a straight line or chalk to mark the ground.

A *dupatta* for blindfolding.

The teacher should select and plan a sequence of activities from the suggestions given below for several lessons. There should be some continuity from the previous lesson and something new to sustain the interest of the children.

Space and time

The children should each find a space where they can stretch out their arms without touching anyone. These activities could be part of a lesson for about 15-20 minutes.

Activities**

1. All the children are asked to form a straight line. It is important for children to first try to do this without the teacher's help. With practice, the children will succeed without any help.



2. The children are asked to show straight lines in their bodies. These might include standing straight with arms down, standing straight with arms up, extending fingers, extending the arms and legs in different directions, etc.



3. The children are asked to find curves in their bodies. These might include using fingers, arms, shoulders, the back and even the tongue.



4. All the children are asked to form curves, semi-circles and circles.



5. The children are asked to draw straight lines and curves in the air using different parts of the body such as a finger, a foot, a knee and a shoulder.



6. Children group in pairs and draw straight lines and curves on each other's back.
7. A straight line is marked on the ground with a stick or chalk. Alternatively a piece of thick string can be placed on the ground. The children are asked to walk on it. They can practise walking straight on their toes or heels.

The teacher can suggest that the children walk slowly or quickly.

The children could walk blindfolded to see how straight they can walk without looking.

8. The children can be asked to move freely, but without touching each other, in straight lines, curves, loops or zigzags. The teacher could suggest different ways to move; for example, hopping, skipping and running.

Different directions such as sideways, backwards or forwards can also be suggested.

Note: If the children often engage in movement activities, then they will feel at ease and understand the exercises as another way of learning and not as an interruption to the class.

Pre-writing exercises using natural materials

Purpose

The link between patterns and writing seems a very natural one, something a teacher can encourage a child to explore. Children may already be familiar with the loops and lines of *nangoli* patterns. By the age of five or six, children can experiment with straight lines and curves, both through movement and through drawing. Such an activity would be an extension of the earlier play with line, movement, and rhythm. There would still be an element of play and experimentation and there should not be pressure on the child to achieve precise and perfect forms. At the same time an atmosphere of concentrated attention and care should be fostered.

Before using pencil and paper or chalk and slate, which require fine movements mainly starting from the wrist, these exercises give the children an opportunity to use the whole arm and shoulder.

By decorating the lines and curves with natural materials, the sense of form is further impressed on the child's mind.

Materials and preparation

Seeds, small sticks and stones can be collected and stored in containers for use in the classroom.

Space and time

Open ground.

This activity could be done individually or in small groups while other children are completing work or are engaged in other work.

Activities*

1. Children draw straight lines, zigzag lines, curves or loops with a stick on the ground and place seeds, leaves, sand or small stones on the outline.



2. The children could write their names using natural materials such as seeds, leaves, sticks or sand.

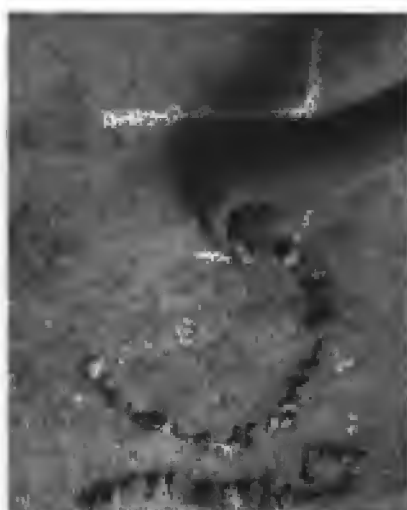
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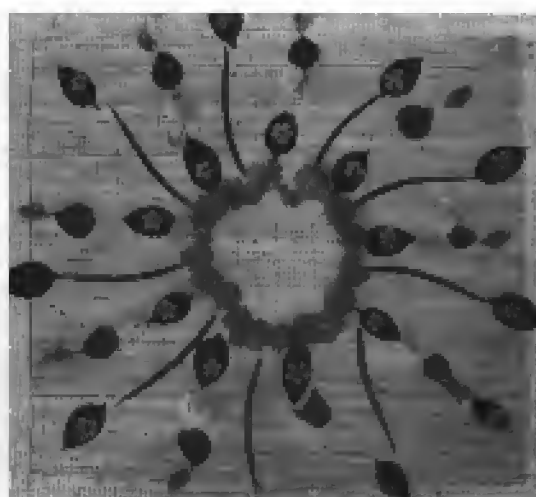
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NAYANATARA



3. Each day children could take turns to make different patterns with sticks, stones, leaves and flowers as a way of decorating the classroom.

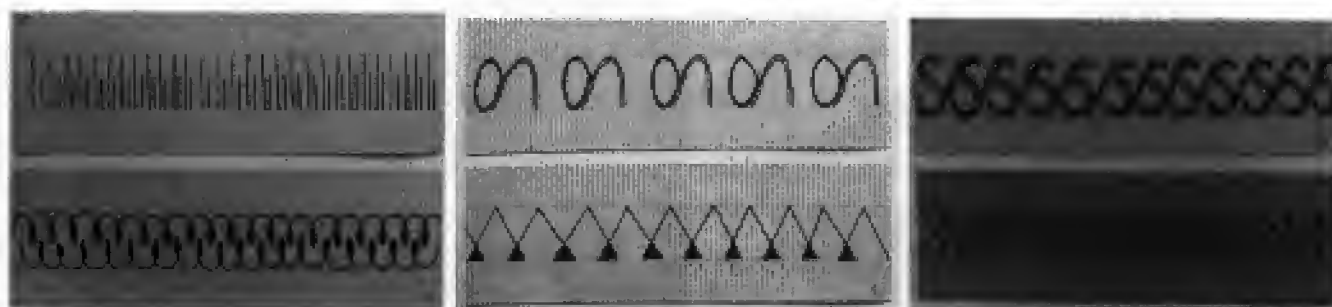


Patterns and writing

Purpose

These exercises help children to develop a rhythmic control and a firm hand without tension. This is also a preparatory exercise to help children be flexible, confident and relaxed in writing.

The basic shapes of the letters include shapes shown in the pictures below:



Preparatory activities

Curves and straight lines.

Patterns with natural materials (see p. 85).

Materials and preparation

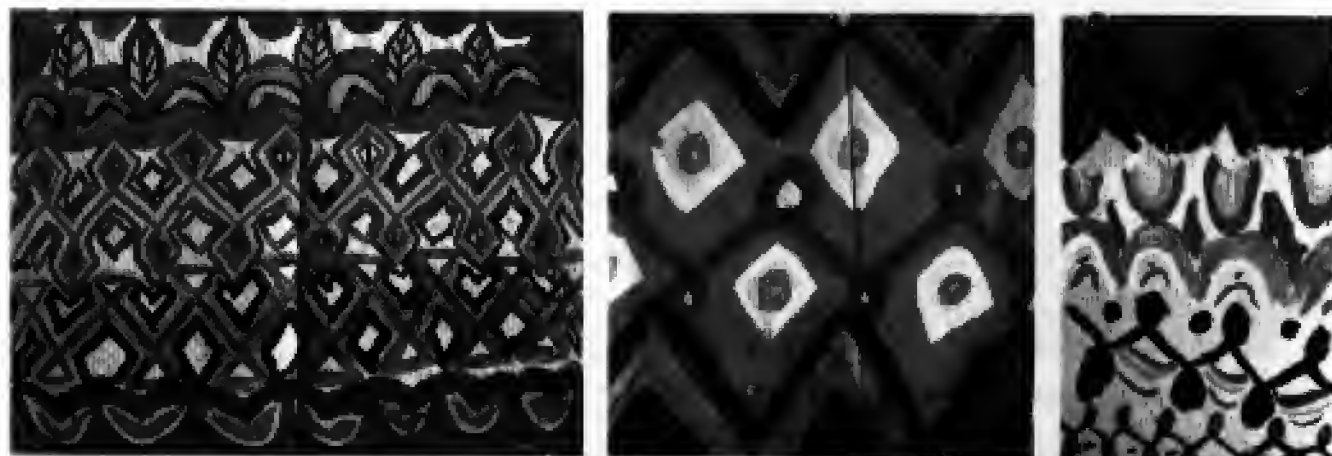
Large sheets of unruled paper. Newspaper, chalk or charcoal can also be used. Wet chalk can be used on the floor. Thick wax or pastel crayons could also be used if available.

A sequence of patterns written on cards (30 cms x 8 cms) can be displayed for children to copy and then develop their own combinations. Alternatively the teacher can select a suitable pattern from the chart and write it on the blackboard.

If necessary, children can first practise on the ground with a stick and, to save paper, could practise on newspaper and only when more confident, make the design on plain paper.

Space and time

This is an activity that can form a part of a lesson or can be done when some children have completed a task and are waiting for others or before the end of the class.



Activities

This work should be done on a large scale and not restricted to notebook size. The blackboard, floor or large sheets of plain paper or newspaper can be used. A long book could be made by stapling strips of paper together for each child's use.

Chalk, charcoal, paint or crayon are preferable to pencil or pen.

At this stage, the children can use the given pattern but they should be encouraged to invent their own designs and not only copy the teacher's pattern.

Additional activities**

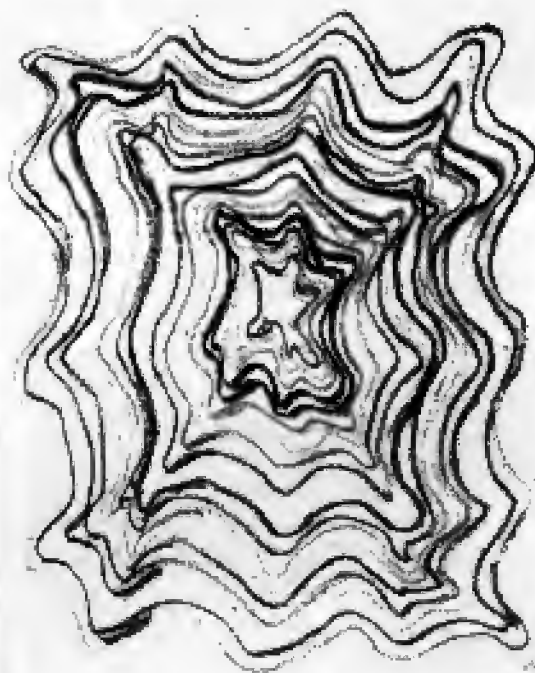
- At a later stage, if possible, the children can also experiment with these patterns to make their own designs using paint which allows for larger strokes.
- *Rangoli* patterns and designs to decorate entrances can be made on the ground with stone powder or chalk.
- Decorating names.
- All-over patterns starting from a central motif and working outwards to fill paper using pen/pencil (see picture below).
- Contour patterns: children draw an outline of a large, irregular shape on a plain A4 sheet of paper and then draw contour lines with alternate colours to the centre (see picture below).

Evaluation and display

These patterns could be used as covers for books or done on thin strips to place as borders around charts on the display board.



All-over pattern



Contour pattern

Writing patterns

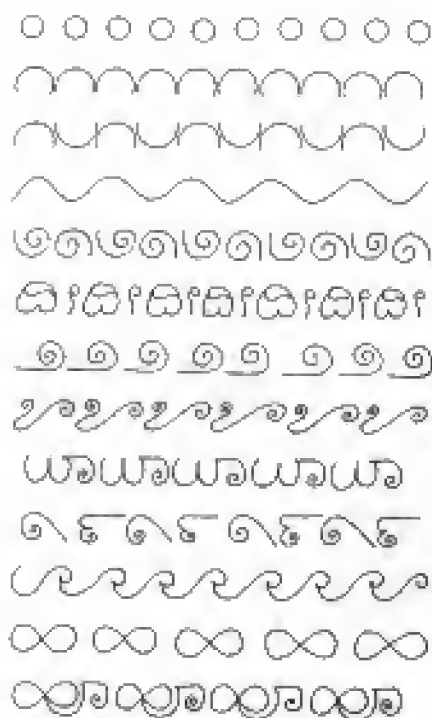
These have been used as the basis for developing a sequence of patterns suitable for practice by young children between five and seven years.



Painting patterns



Covers for books



Examples of simple patterns



Examples of more complex patterns

Lines and markings

Purpose

These exercises give children an opportunity to experiment with many different kinds of lines. It is a continuation of the exercise that investigated straight lines and curves in physical movement.

Materials and preparation

Plain white paper, A3 or A4 size. If possible, use paper that has already been used on one side as this will be a big saving.

Newspaper.

Pencils, 2B drawing pencils if available.

Chalk, charcoal, black crayons, black ballpoint pens.

It is helpful for the teacher to try out the suggested exercises before the class.

Space and time

These exercises could be done over two 45-minute to one-hour periods.

The further activities would require a full period each.

Activities**

1. Using pencils, the children can experiment in making all the different kinds of lines and markings possible.

The teacher could stimulate the children further by making suggestions, such as draw a twisting line, a broken line, a zigzag or a bumpy line.

Time should be given to look at each other's work and see how much variety is possible. The teacher can help to draw attention to original ways of drawing lines.

2. The above exercise could be done with chalk, charcoal, black crayon, ballpoint pen or with black paint.



Note: It is important to stress that the children, at this stage, are drawing different kinds of lines and not representing things like flowers or flags or any other recognisable object.

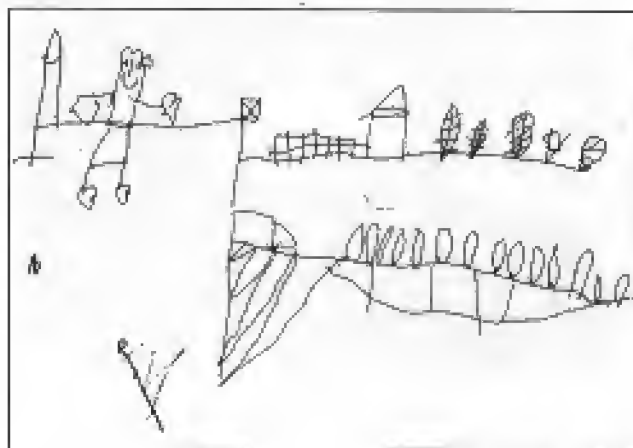
3. Taking a line for a walk

This exercise could be carried out on the lines of the game "Follow the Leader", where one person moves in a variety of ways (skipping, hopping, crouching) and others follow. They can move in different directions – forwards, backwards, sideways or zigzag and at different levels, high and low, and at different speeds.

In the classroom, the children can draw and imagine a line going for a walk and observe the different ways they can show movements. The children could describe to each other how the line/their friend walked and could write about it also.



Taking a line for a walk



The quality of the line in drawings

Colour

Purpose

These activities would help children to be more aware of the range and subtlety of different colours.

Preparatory activities

See section Looking at colours (p. 27).

Materials and preparation

A collection of waste paper could be made over a period of time and sorted into different colours and stored in plastic bags or containers. If available, powder paint, gum and brushes can be used.

Space and time

Floor space is needed for this work. Newspaper can be spread on the floor to protect it from becoming dirty.

The colour gradation exercises can be done outside or in the veranda that has sufficient space.

Paper mosaics and collages require patience and time and can be quite tiring for young children. It is suggested that children work in small groups so that the work does not become tedious.

Activities

1. The teacher asks the children what colour leaves are. The children will probably answer "green". They can then go outside and collect leaves both from trees and from the ground and sort them into different colours. These might include green, yellow, brown, purple, red and white leaves.
2. The children could be asked, for example, to collect all the green things in the garden and then arrange the different shades of green from dark to light. A similar exercise could be done with brown or yellow.
3. A collage in greens could be made of different media: paper, cloth, thread, crayon, paint, etc.
4. The children can then explore colours with black and white by adding them to other colours to form shades of a particular colour. How many shades of green or gray can you make?
5. The children sort waste coloured paper into colours and then, individually or in small groups, select two colours and make a collage or a paper mosaic.



Sorting colours

Related activity

Making shades of colours (see p. 39).

Art and the environment

The elements

Earth

Water

Air and space

Fire, light and heat

Exploring materials

Plants

String, thread and cloth

Paper



The elements

Children learn about the world through observing, experimenting and making things. They begin to understand the different qualities of materials and the nature of the five elements through investigations and play. Children find a variety of ways to express what they have seen and experienced through the different media of fingers, pencil, charcoal, crayon and paint.

Children also begin to realise that everyday things have a form in keeping with their function, whether it is a ball or a spoon, a comb or a window.

Some of the materials we use are thrown away and the disposal of waste, particularly non-biodegradable waste, has become a major problem both in rural areas and in cities. In exploring the qualities of materials and a range of their possible forms and uses, children become more sensitive and responsible towards the world of things that surround us. They also develop skills and confidence in their own creativity and imagination.



Earth

The soil

Clay work

Sand, rocks and stones

The Soil

Purpose

In this section, children explore the different qualities of earth: clay, sand and rocks. They also begin to understand the ways water and heat change the consistency of the earth.

Activities

1. The children could discuss the ways in which earth and water are the same and the ways in which they are different.
2. They could also think about animals that live in water and those that live on the land.
3. The children could collect different coloured soils and could experiment with making designs from these.

The soil could be powdered and sieved and then mixed with water to make a thick paste. This can be used as a paint either directly with the hands and fingers, with natural brushes made from bamboo stems or with paintbrushes.

The designs could be bold and large.



Collecting different types of soil



A picture using earth materials



Mural of animal habitats



The web of life



A journey through the forest



Farmers at work



A chart on water



A sand garden



A sand garden painted



Arranging a mobile



Boat-making



The seasons of the year



Flying a kite

The elements



A chart about the rainy season



Monsoon personified



Creation Stories



Clay work

Purpose

The children explore the properties of clay and practise shaping and moulding the material.

Preparatory activities

Exploring Clay (see p. 23) is a helpful introduction to working with clay.

Materials and preparation

Clay, if possible, collected from a nearby lake or from a potter, a sheet of plastic or newspaper or a flat smooth surface that can be washed if water is available.

Clay can be stored in a bucket or container and covered with a damp cloth and closed to avoid hardening or drying.

Prepare the clay before the class. Put a portion of clay for each child in a plastic bag and seal it, as it ensures that the clay will keep its correct consistency. It also makes it easy to distribute and the children can put it back in the bag after the class to be used again.

Damp sponges can be provided for the children to keep their hands moist as the clay becomes drier with handling.

Clay tools such as sticks and blunt knives can be provided.

Some clay paste can be made to enable pieces of clay to be joined together. In small bowls, the teacher can prepare clay paste (slip). This is made by adding a little water to clay and stirring it until it becomes a thick paste (like *dosa/cheela* mixture). The children can apply this with a brush or with their hands.



Activities

1. Simple shapes and forms

The children could experiment with making irregular shapes as well as simple regular forms such as a sphere, cube or cylinder.

Each child can be asked to make one or two larger forms.

Gradually, the children will discover different possibilities with the forms they make. They can be asked to change the shape, to make hollows, holes, sharp edges and curves.

The children could be asked to make a very smooth, round surface.

Several children could join together to make a larger model or sculpture.

They can use the slip to join parts together.

The forms can then be arranged and discussed. The teacher can ask the children questions like, "Do the shapes remind you of anything? How do you feel about it?"



2. Making pinched pots

Before the class the teacher could experiment making a pinched pot.



A lump of clay is held in the left hand and turned round as the right hand is used gently to pinch the edges and a hollow is formed in the middle to make a simple pot.

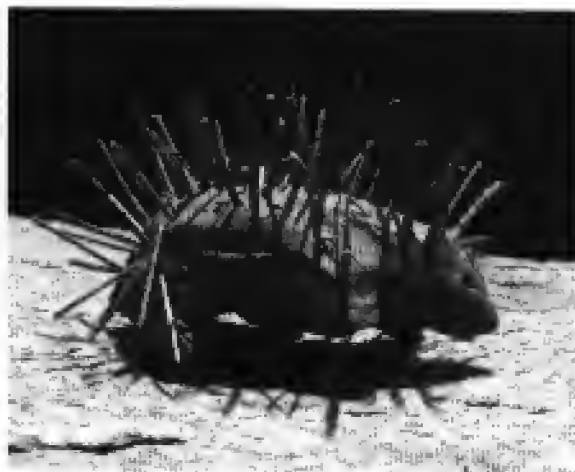


It is important for the children to learn to handle the material carefully and not to handle it too much to avoid drying or cracking.

3. Fantastic animals and people

The children can be asked to model imaginary people and animals. The teacher could suggest that the figures be made in different postures such as kneeling, lying down, or flying to give more variety. The figures can be grouped together for display.

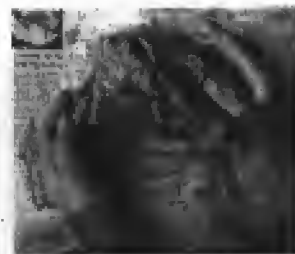
Exploring the possibilities of imaginary figures in this way helps children gain confidence to try out different shapes because they do not have to worry about recognisable or realistic forms.



4. Exploring textures in clay

The children can roll out a flat slab of clay using a rolling pin or a smooth bamboo cylinder. They can then explore textures by pressing pieces of bark or other materials such as casurina cones, eucalyptus seeds etc. to make an impression.

Taking another slab/tile of clay, the children can use tools such as tooth picks, sticks or blunt knives to copy a texture such as the bark of a tree.



Making a variety of forms in relief



Variation

A flat slab or a smooth sphere can be decorated and added to by pressing clay pieces into the surface, using the clay paste (slip) to ensure that it sticks.

Note: A firmer tile can be made by making rolls of clay of even thickness and length, placing them vertically together and joining with slip. More rolls of clay of similar thickness and length are then made and placed horizontally on top of the first layer. The surface is then made smooth enough to work on by pressing and applying a little slip between the creases.

Sand, rocks and stones

Purpose

Most young children will have had the experience of handling both wet and dry sand and discovered many of its properties through play. Sand provides a very good base for making patterns with natural materials. It may be possible to collect sands of different colours.

Activities

1. Dry sand can be put in a shallow tray and used for making miniature gardens or landscapes, making patterns with sticks, leaves, stones, petals and shells, etc. Constructions using twigs, sticks and stones can be made to build different landscapes that might include houses, people and animals.
2. Wet sand can be poured into different containers or moulds and turned upside down onto the flat sand to make different shapes.
3. Alternatively, wet or dry sand, outside on the ground, can be used for making pictures or patterns on.



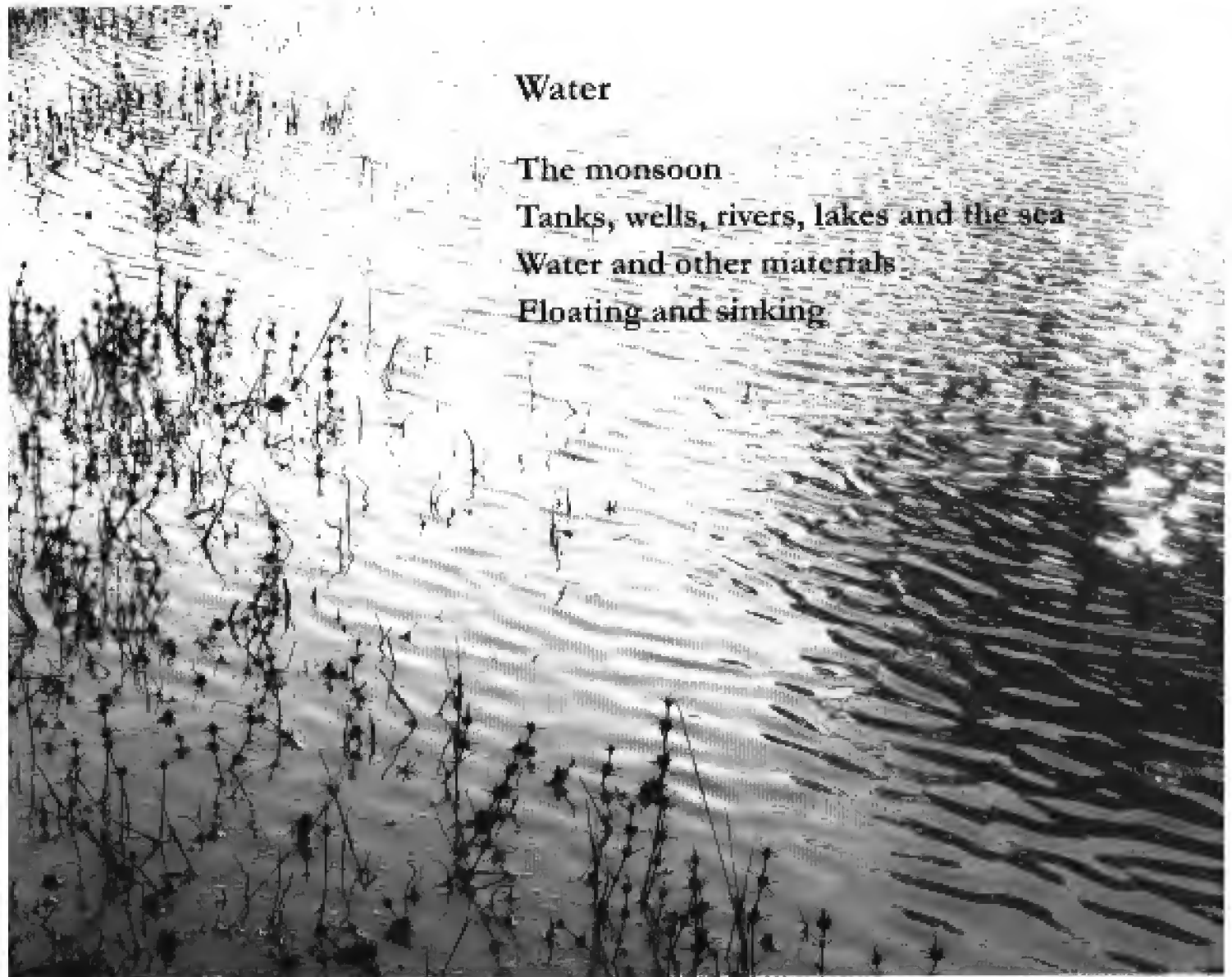
Making landscapes with sand

The children could make a collection of stones and rocks and display them. Stones can be used to make patterns, also for construction or could be painted to highlight some suggestion of an animal or person.



Rocks and stones in the landscape

Sorting stones in the classroom



Water

The monsoon

Tanks, wells, rivers, lakes and the sea

Water and other materials

Floating and sinking

The everyday experiences of how water acts with different materials, such as how it mixes or doesn't mix with substances, how some things float and others sink, the patterns and changes that water creates, etc., can be reinforced not only through science classes but also through close observation and practical art activities.

By adding water some materials are given shape. For example, rice flour or *ragi* balls are made by mixing dry flour with water, *chapatis* are shaped from dough mixed with water. When water mixes with earth, clay and mud are formed. The children will have experienced the flowing quality of dry sand and how wet sand can be formed into shapes.

Water can also dilute and change substances so that they lose their shape. And it can change solids to liquids. For example, the rain may carry the top soil in a flowing brown stream.

The monsoon

Purpose

To help children become more aware of their surroundings and how seasons change the environment. The effects of the monsoon are very visible to every child. There are special smells, colours, textures and sounds connected to the experience of the rainy season.

Activities

1. The children could be asked to describe their experience of the rains. A poem about the rainy season may inspire children.**
2. The children could be asked to draw or paint something particular that they think of in connection with the rain. Subjects might include the growth of mushrooms, the white-ant flies, playing in puddles, ploughing, the morning after the rain, returning home in the rain, taking shelter under the tree, me in my new raincoat, patterns made in the soil as water flows down, people with umbrellas.

It helps the children if they can begin to have a word-picture or an idea in their mind of something particular before they start.**



Writing and drawing about the rain

3. Alternatively, the children might copy or write a poem about the rain and illustrate it.**
4. Actual experiences, both of floods and of drought, and stories about them could be used as a theme for pictures.**

Tanks, wells, rivers, lakes and the sea

Introduction

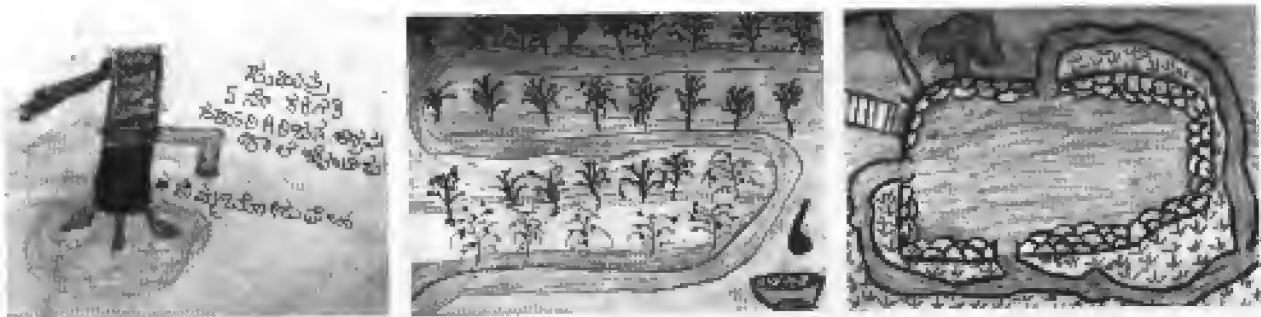
Discussion about the sources, uses and storage of water.

Discussion about animal life in tanks, rivers and the sea.

The children could be encouraged to notice the patterns on water, how ripples form, reflections in water or waves on water.

Activities

1. The children could think about where they get water from and draw a picture showing what is familiar; for example, the pump, the well, a water tanker, a canal or a tank.



Sources of water

2. The children could make a mural of the things and animals that are under the water.

If possible, the children could look at fish and observe the special forms of different fish that enable them to live and move in the water. Alternatively, the teacher can show pictures and help children observe the variety of shapes and forms of fish.



Collage of fish made with wood shavings

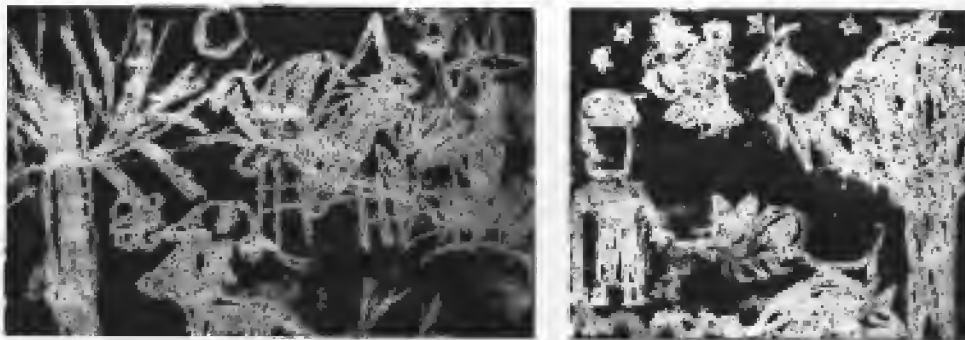
Water and other materials

Activities

1. Wax and paint

Wax crayon combined with thin poster paint is a practical way of observing and using the qualities of materials that resist water. A picture is made with wax crayons and then using a brush, a coat of thin paint is applied all over.

A white candle or white wax crayon can be used to make rubbings of different textures on a white piece of paper and then covered with thin paint.

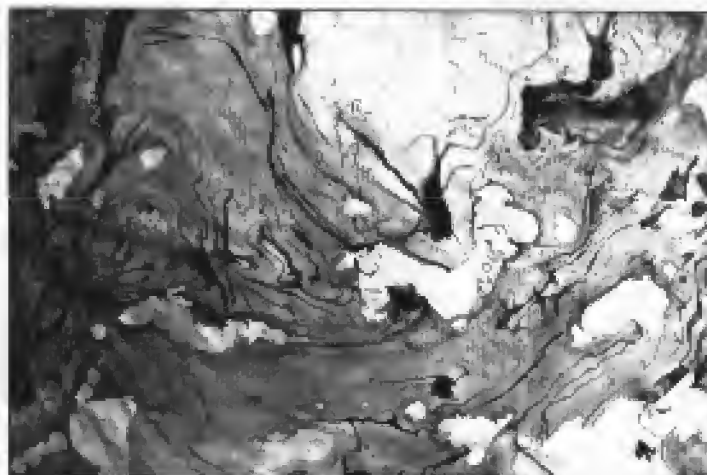


Pictures of the night with candle wax and black paint

2. Marbling

This is an activity for small groups but the children can see how patterns are made using the surface of the water with oil-based paints.

- ♦ Half fill a shallow rectangular container with water.
- ♦ Drop three or four drops of either enamel paint or printing ink on the surface of the water. Two or three colours could be used.
- ♦ Blow the surface of the water (a straw helps) or gently stir with a stick to disperse the colour and make patterns.
- ♦ Lay a white sheet of paper on the surface of the water and then remove it to dry.
- ♦ Use this sheet to cover books or cut it in strips to make decorative borders for notice boards.



Floating and sinking

Activity

The children may have observed things that float and sink, either in the classroom, in the science class or outside. Ask the children to design a raft or boat with any available material including natural materials such as seed pods, twigs tied together, leaves stitched together or wood.

Looking at the children's models, discuss how the shape, size and material affects the efficiency of the boat.



A more difficult task would be to ask who can make a boat that can carry the most wooden beads or some other countable item.

Air and space



Flying kites

Making a house

Mobiles

Constructions that fly and move

Children will all have had experiences of constricted spaces and open spaces. Our fear of darkness is partly due to the unknown but also because of a sense of limited space. Light opens up spaces. In the following activities, children begin to think about our different experiences of space and how structures and buildings create spaces, how movement is possible within spaces, for example, in making a mobile.

Making a house

Many children have had the experience of transforming a secret place or corner into an imaginary world. In the child's mind, this space may become a boat, a house, a bus or a cave. This may be made with natural materials, outside in a ditch or under a tree, or inside with mats, boxes, sheets and bolsters or whatever is near at hand. Sometimes, it may be a space large enough to play in or small like a shrine in a sand tray.

Here is a story from North East India of how the first house was made with the help of animals.

The first house

Long ago people did not live in houses. They took shelter under trees or in caves but it was very difficult in the rain and the cold and in the wind and the hot sun.

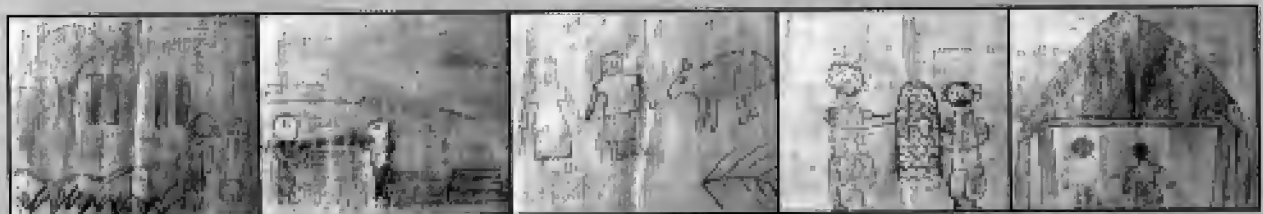
One day two friends decided that they would like to live in a house but they did not know how to begin making a house. The two friends went and asked an elephant how they should begin. The elephant thought and then said, "You must make four pillars as strong and as thick as my four legs. But don't ask me what to do next because I have no idea."

The two friends did as the elephant had suggested and made four strong pillars. Then they went to the snake and asked him what they should do next. The snake thought for a while and then said, "You must make some poles as long and as thin as I am. But don't ask me what to do next because I have no idea."

The two friends did just as the snake had suggested but the house was still far from finished. Then they went to a she-buffalo and asked her what to do next. The she-buffalo thought and then said, "You see the skeleton of this dead buffalo? You must make a roof structure like the bones of a buffalo. But don't ask me what to do next because I have no idea."

The two friends did just as the she-buffalo had suggested but the house was still not finished. Next they went to a fish and the fish said to them, "See the scales on my back! You must make a covering for the roof using layer upon layer of dried leaves just like my scales."

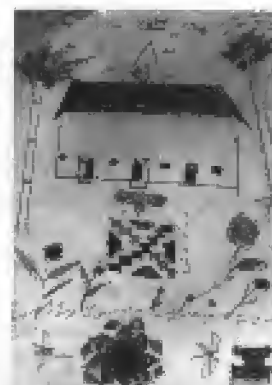
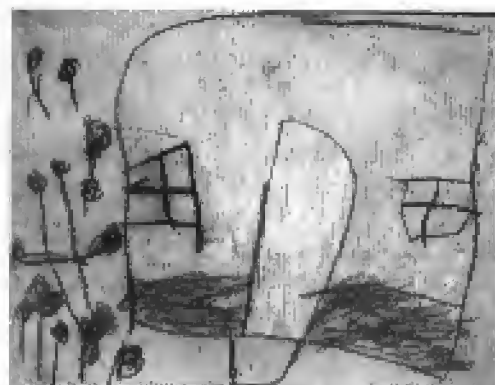
The two friends made the roof and now they had a house that sheltered them from the wind, the rain, the heat, and the cold.



Pencil drawing of the story of "The first house"

Activities

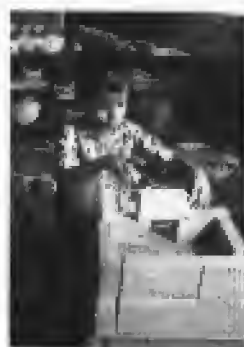
1. The children could draw pictures to illustrate the story or they could draw their own house. Often young children's pictures of houses vividly express the idea of an enclosed space but may not be a realistic representation of the house. Sometimes a child's picture of a house looks like a face with two eyes for windows and a mouth as a door. It is as though the children see the house as a part of themselves.



2. Older children could be taken to visit a building site where a house is being constructed. They could draw pictures of the different stages of construction and the work of the carpenter or the mason. They could look at the differences between houses and try to show that in their pictures.



3. Children can construct play houses or model houses with natural materials and waste materials. They can be very creative and inventive and may enjoy working in small groups and then visiting each other's constructions.



Making constructions

Mobiles

A mobile is a sculpture in space. It is not just the hanging of objects. Rather, attention should be given to the movement that is possible and the relationship of the objects to each other so that a balanced and interesting sculpture is made. Mobiles are an effective way of making a more interesting display where wall space is limited.

It is important to hang the mobile in a place where it does not obstruct the children's movement. It is visually more exciting if the decorations can be hung in such a way that they can move freely. If possible hang them in a place where there is some wind; for example, in a doorway. A mobile should combine elements of balance and movement. Lighter materials such as thin card move more easily and are more suitable than heavier materials for the construction of mobiles.

Older children can create more complicated designs. Listed below are given a few suggestions for simpler mobiles that would require minimum help from the teacher.

1. Using a branch

The simplest mobile can be made by using a dry branch of a tree to hang objects or pictures. Birds, butterflies, fruits and flowers can be cut from card and coloured on both sides.

Alternatively, thin clay models can be made and a hole punched to thread string.

The children could be asked to think of all the creatures that might be found on a tree including insects, children climbing, monkeys, squirrels etc. or they could imagine a magic tree.



2. Around mobile

This can be made by suspending a hoop or a ring of wire.

Shapes related to a particular theme such as fish, animals or dancing figures can be drawn on card, cut out and coloured on both sides. Holes can be punched at the top of the pictures and threaded. These could then be hung from the ring at different lengths.



3. Paper mobile

A stiff piece of card, such as the cover of an old notebook, can be used to support a mobile. Holes are punched at the corners and string is threaded through them and shapes or figures are suspended at different heights. A central hole is made in the card and string threaded to support the mobile.

4. Using sticks

Themes such as birds or butterflies or a design using natural materials such as seed pods, twigs, feathers, seeds etc. can be hung on sticks at different levels. Simple mathematical shapes can be made in pairs and cut in such a way that they slot into each other as shown in the pictures below. In assembling a mobile with two levels, it is easier to start from the bottom up.



1. Place all the objects and sticks on the floor.
2. Tie the sticks and objects approximately. (Make sure that the objects do not touch each other.)
3. Tie a string against a wall.
4. Tie the main string on to this.
5. Now balance the sticks and put a little gum on each hanging thread when all the objects are in place. The mobile is balanced with the sticks horizontal to the ground. This is so that the strings do not move.



Constructions that fly and move

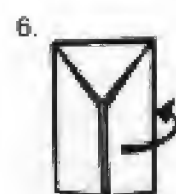
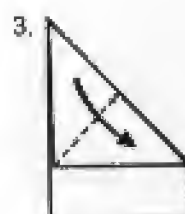
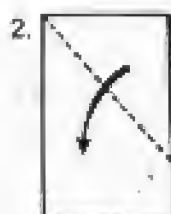
Different kinds of models, such as flying fish, gliders, helicopters, parachutes and kites, can be made. The children can experiment to see which shapes and sizes are most effective for flying.

Flying fish



Origami plane

1. Crease an A4 sheet in half vertically and open out.



Fold the top flaps to the left on both sides. Then open out.



Parachute



The children can be asked to design a parachute from plastic bags or paper, string or thread, bottle tops, straw, tape and any other construction materials. Children can think about the design and how best to make a parachute that falls slowly to the ground.

A kite

A kite is more difficult to make but could be made with the help of older children.



Fire, light and heat

Fire and cooking

Darkness and light

The summer season

Fire and cooking

In thinking about fire children become more aware of how heat and fire change substances. Through telling a story children can imaginatively enter into the wonder of how fire was first used by human beings and the sense of risk and danger that it involves. A number of stories that tell how fire was first used stress the sense of interdependence between human beings and animals.

The experiences of day and night and light and darkness are very significant for all human beings. Many stories and myths relate to these themes. Heat is also associated with the summer season and children can think of the activities and events connected with summer.

How cooking began

A Santhali story

The first people on earth did not know how to keep a fire but there is a story that tells how fire was first used. One day, there was a grand wedding. The bear and the cat were to be married. Many guests came from far and near and there were all kinds of four-footed and two-legged creatures. After the garlands had been exchanged, the animals sat down to eat the wedding lunch. The animals were not happy because the food was not tasty – everything was raw and hard to chew.

The only creature that was able to keep fire was the firefly and he would not share it with anyone. The animals began to discuss who would go and bring the fire to cook the wedding lunch. The squirrel said that he was too small. The leopard said that he was too spotted and that the firefly would see him coming from a distance. The elephant said that he was too big and could not hide. The peacock said that he did not want to spoil his beautiful tail in a fight. In this manner, all the animals, one by one, made excuses. At last, the tiger said that he would go.

Drawing on the blackboard and telling the story of "How cooking began"



The tiger set off running between the tall grasses and the trees until he saw the firefly bright with flames.

The firefly and the tiger began to fight. Just as the tiger was about to crush the firefly, the tiger was changed into a leaf, blowing this way and that with the wind. The tiger also used some magic and fortunately his tiger shape returned. Then the fight began again and the firefly changed the tiger into a pile of dust. This time when the tiger's shape returned he was even more fierce and was about to overcome the firefly. The firefly begged for mercy and promised to give the tiger some fire.

The tiger returned to the wedding party with a burning stick on a leaf. The fire was used to cook the wedding feast and never had there been such a banquet.

Activity

The children can collect charcoal and ash and make pictures by drawing with charcoal and adding ash by sprinkling it on the paper where gum has been applied.

By dipping the charcoal in water, the children can make clearer lines.

The children can experiment with charcoal to see the different ways markings can be made, such as dots or patches of black or grey colour, and use these ideas to make their pictures more varied and interesting.

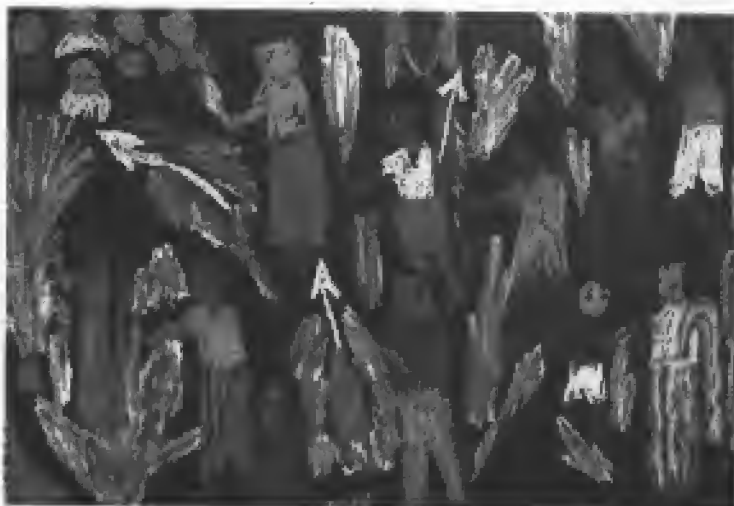
Darkness and light

Many children have a fear of darkness. It is often helpful for children to express and share both their negative and positive feelings and experiences of darkness and night.

The children could be asked to think of things, people and sounds they think of in the night. They might mention owls, bats, lamps, stars, thieves or ghosts. They could make a mural together of things in the night. Alternatively, they could draw a picture with wax crayons and then paint over it with a thin mixture of black paint.

Older children might write and illustrate a dream they have had.

Festivals such as Diwali are important occasions for thinking about the relation of light to darkness.



Related activities

The making of stories (see p. 131).

A stained glass window effect can be made by cutting out the shape of a picture drawn on a black card. Coloured kite paper is cut and pasted on the reverse side. The picture is best displayed against the light (see p. 75).

Celebrating Diwali

The summer season

Purpose

To help the children become more aware of their surroundings and how seasons change the environment.

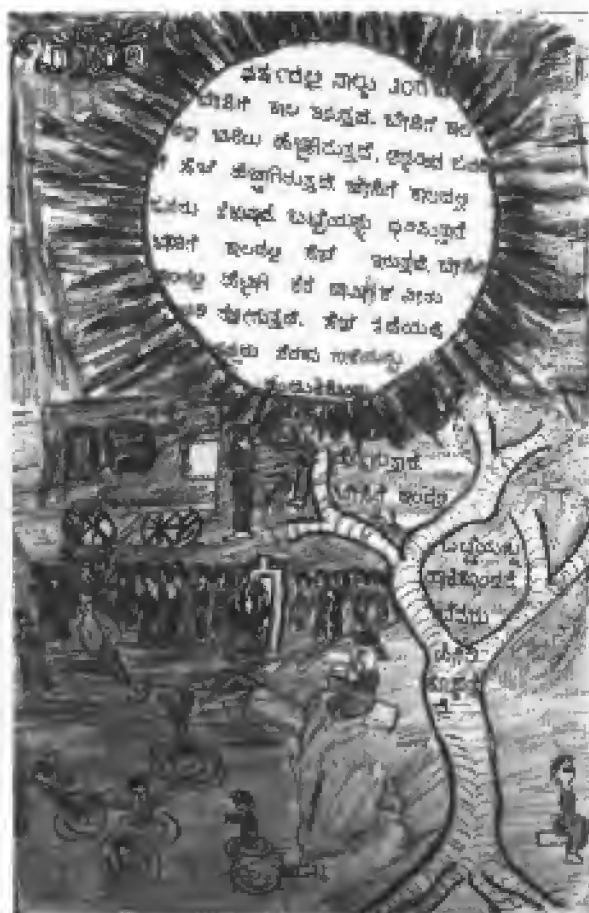
Summer is associated both with changes in nature and in human activities.

Summer may be associated with mangoes, new leaves and blossom of certain trees and dry tanks and riverbeds. Certain activities are also associated with summer, such as the making of bricks, the leisure of holidays, carrying water, playing under the full moon, sleeping outside, etc.

Activity

The children could draw or paint their experience of summer. Each child could think of something quite particular about summer and the pictures could be put together to make a book or chart about the summer season.

See the pictures of the summer season below and on the following pages.



Pictures of the summer season

Additional activity

The children can be asked to represent the summer season as a person. The mood and colours associated with the season can be shown imaginatively (see p. 75).

The summer season



Light and darkness

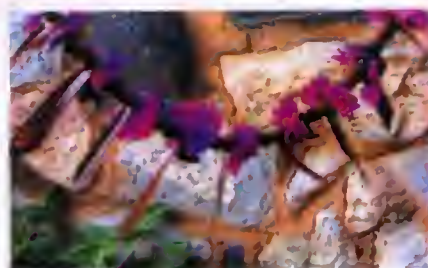




Picture made from pencil shavings



Plait from waste cloth



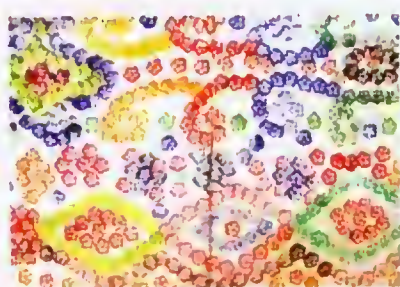
Garland from seeds and flowers



String collage



A rainbow of colours made from the rubbings of natural materials



Print using okra (lady's fingers)



Patterns based on natural forms





The children could make a mural by first preparing a background of two layers of newspaper and then colouring it with mud that has been mixed with water to form a brown paste. On this background, the children could draw, colour and cut out trees, plants and flowers. The children could be encouraged to observe the shapes and colours of very different trees and then to choose a particular tree or plant that they would like to draw. It helps children to talk about different trees and then draw from memory and for older children to make sketches looking at the tree itself.

A riddle book could be made using pictures. In addition each child describes the leaves, bark, flowers and fruit of a specific tree without mentioning the name of the tree. The other children try to guess the name of the tree.

Questions for discussion related to a tree

- What is the name of the tree?
- What makes this tree different from other trees?
- What colour is the bark? Is it all one colour?
- Is there a pattern on the bark?
- What is the shape of the tree if you look at it from a distance?
- What shape are the leaves?
- Are all the leaves green? What kind of green are the leaves?
- Are there fruits, seed pods or flowers on the tree?
- If there are flowers, are the flowers only one colour?
- What can you see under the tree?

Different kinds of trees in our village



Indian beech



Banyan



Jackfruit



Fig tree



Papaya



Amla



Coconut



Raintree



Tamarind



Banana



Jamun



(Singapore) Cherry

Sketches of different trees

Natural colours from plants

If possible show children examples of *bagh/ ajarakh/ kalamkari* prints or pictures. They could observe that only some colours are used and a discussion about dyes and colours could follow. Then they could reflect on natural colours that are available in the surroundings.

The children can experiment by rubbing leaves and petals on white paper to see which colours can be made. They can use different parts of plants such as seeds, roots and wild fruit to see if they can find other natural colours.

The children can share their findings with the group and discuss some of the following questions:

- What makes the colours different?
- Were they able to find all the colours?
- Were there any surprises?

Then working together, the children can make a rainbow of colours. They could be reminded of the order of colours (see p. 76).

Stronger colours could be prepared and applied with a brush. For example:

Green

Cut up leaves and boil in water, strain and use.

Yellow

Mix *haldi* with water.

Orange

Boil the flowers of the flame of the forest or marigold petals. Strain and use.

Blue

Blue morning glory flowers when moistened and rubbed give a light blue colour.

Purple

The skins of onions can be boiled and the water strained.

The juice of *jamun* and *tantana* berries also gives a purplish colour.

Pink

Boil beetroot in water.

Brown

Use strained tea or coffee.

Mud diluted with water also provides a variety of brown shades.

Haldi can be mixed with ash, lime and soap to create reds and browns.

By using charcoal for black and powdered bricks for a brownish red the children can make pictures from natural materials.

Note: Gum arabic can be added to make the colours thicker.

See Appendix IV for more information (pp. 155-56).

Leaves

Leaf prints

Materials

Leaves of different shapes, sizes, a plate, thick poster paint, white paper.

Activity

Put some thick poster paint on a plate. Then put a leaf facing upwards in the paint or alternatively paint the underside of the leaf with a brush.

Place the painted leaf on paper and cover with another piece of paper and gently rub.

The patterns of leaves can be used to make a design or a landscape; for example, by putting the leaves vertically to make them look like trees. More than one colour can be put on each leaf.

The leaves can be overlapped by placing three leaves together and applying different colours on each. A sheet of paper is placed on top and the three leaves are gently rubbed.

The leaf patterns can also be used to make birds, flowers, animals or people and features such as eyes, beaks etc. can be added.

Note: The tops of lady's fingers, carrots, and some flowers can also be used to make prints.

Leaf rubbings

Activity

Leaf rubbings can be used to make designs or pictures.

Leaves with clear veins are placed on newspaper and a white sheet is placed on top. Using crayons the top layer of the white paper is gently rubbed to make the impression of the leaf.



Leaf designs

Materials

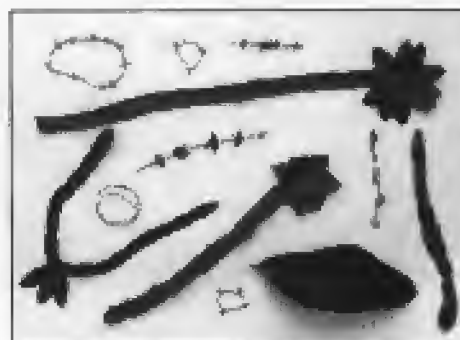
Leaves, gum and paper; alternatively just leaves.

Activity

Collect leaves of different sizes, shapes and colours.

The leaves can be arranged to make all kinds of designs.

The leaves either be stuck with gum on paper and displayed or time can be given for children to look at each other's work on the floor or ground.

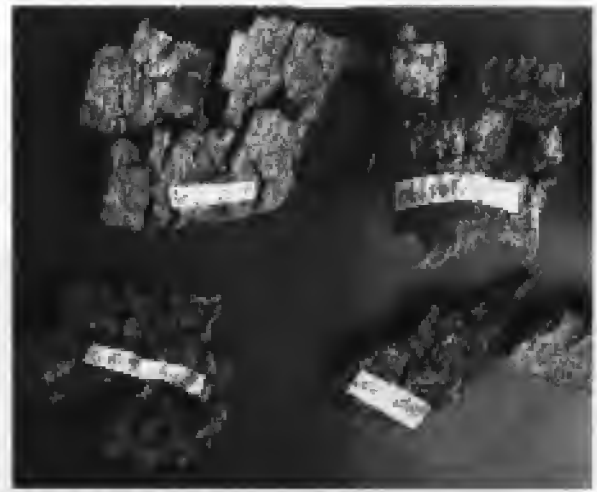


Wood

Wood, as a material is entirely different from sand, clay or paper. Children are familiar with it through many different forms: fallen logs, wooden furniture, ladders, drums, shavings, charcoal and firewood.

One way of stimulating ideas is to have a small exhibition. The teacher could display a few wooden items including some pieces of wood such as bamboo. The children could add different items of wood or unusual pieces of wood to make an interesting exhibition.

The collection might lead to a discussion on different kinds of wood and which kinds of wood are used for particular purposes.



Patterns from wood and bark

Materials

Paper, tape, crayons.

Activities

1. Rubbings

Children can find different textures and patterns on wood.

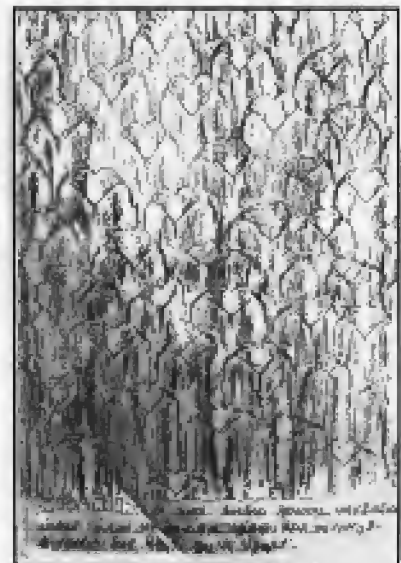
Paper can be placed and, if necessary taped, on to bark, stumps of wood, cross sections of the trunk or pieces of wood. The knots in wood might create an interesting design.

The pattern is made by gently rubbing a crayon in one direction.

The patterns can be labelled and displayed or used together to make a picture or a background for a picture (see p. 77).

2. Clay impressions

The children can use pieces of bark to make impressions on clay.



Picture and description of the bark of a papaya tree

Wood shavings and sawdust

Materials

A variety of sorted wood shavings and sawdust collected from a sawmill or carpenter, gum and paper.

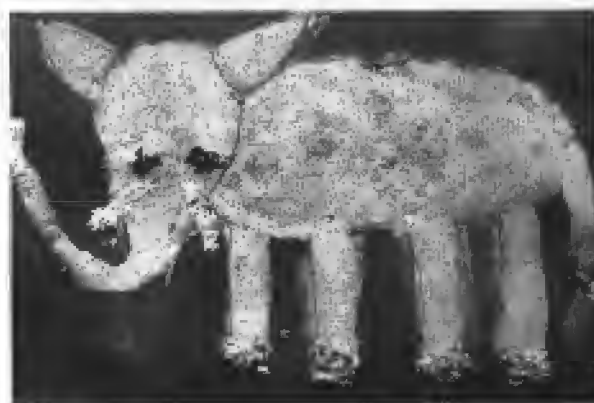
Activity

On plain paper an outline is drawn in pencil or chalk.

Different areas are covered with gum. Sawdust and shavings of different colours are sprinkled appropriately.

The paper is gently shaken to allow the excess sawdust and shavings to fall off.

These materials can be used in conjunction with other materials such as sand, ash, string and charcoal. Alternatively, colour can be added.



Shapes from twigs and branches

Materials

Branches and twigs collected by the children.

Activity

Children can be encouraged to collect twigs and branches of unusual shapes that have fallen. Different parts of the coconut tree – the shell, bark, fibre, leaves and sticks – could also be used.

The shapes may suggest to the children particular animals or birds.

The bark can be carefully scraped from the branches and arranged in a way that is suggestive of an animal or bird. The figures could be made to stand in sand or in clay.

The children can experiment with making different kinds of constructions.



Seeds

Threading garlands and necklaces

Purpose

There are many ways for children to explore pattern-making with natural materials on the flat surface of the ground or by using thread and string.

Materials

Seed pods of the baubinia, eucalyptus, cassia, shells of groundnuts, other seeds, flowers and leaves.

Activity

Seeds and seed pods that are not too hard for children to pierce a hole in can be threaded to make patterns and tied to make a necklace. Garlands can be made that use a variety of natural materials. Alternate patterns could be threaded varying size, colour or shape.



Display

These garlands could be used to decorate the classroom for a special occasion.

Other home-made jewellery can be made and the children could have a small sale or the items could be taken home as gifts.

Collages with seeds and other natural materials

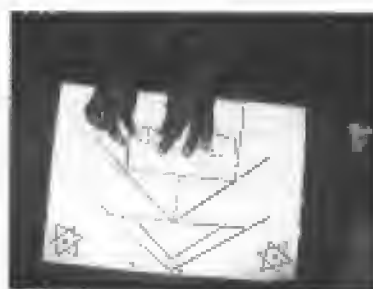
Materials

A variety of seeds can be collected and sorted. These might include: casuarina cones, eucalyptus seeds, water melon seeds, tamarind seeds and other natural materials.

Clay or paper.

Activity

Natural materials such as dried straw, broomsticks, grasses, coconut fibre or the husk of corn can be used to make a design on paper and stuck with gum. A design from seeds could either be pressed lightly into clay or stuck on paper. A collage could be made with seeds of two colours or small and big seeds or rough and smooth seeds or seeds of two distinct shapes.



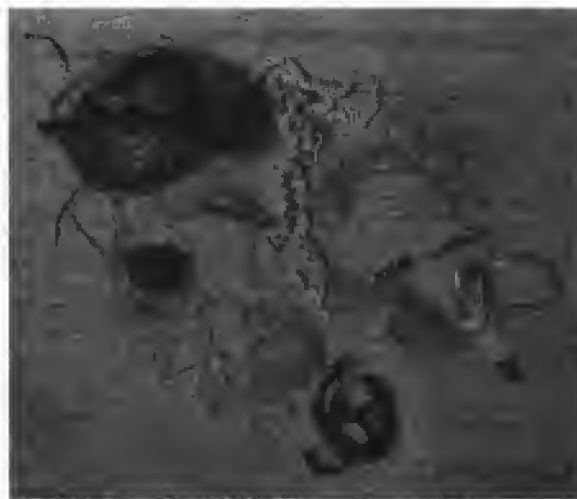
Note: A mask could also be made using clay as a base and pressing straw or natural fibres into the clay.

Leaf plates and leaf cups could be used as a base for masks.

Related activity

Collage (see p. 34).

String, thread and cloth



Different types of threads

There are many ways children can explore the qualities of string, thread and cloth, both in making and constructing things and making collages and pictures.

Exploring threads

Materials and preparation

It is a good idea to encourage the children to collect long and short pieces of string over a period of time. These can be stored in a cardboard box. Very often string is just thrown away but it can be used for a number of art activities. The children will soon realise that there are many kinds of string, including nylon string, coconut twine, jute, cotton thread and wool.

String and thread also come in varying thickness and colour.

Activity

Each child can choose a piece of string. The children can experiment with the string and then its different qualities can be discussed. The children may also want to know the sources of the different types of string and which are man-made and which are natural. They can also contrast different threads noticing, for example, how nylon thread makes tangles or wool is soft and springy.



A display could be made by experimenting with the threads and arranging the different effects by sticking them on a black background. The strings could be unravelled, twisted, plaited or knotted.

Patterns, designs and pictures using threads

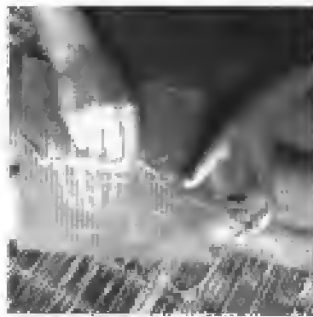
Materials

At least four different kinds of thread varying in colour and thickness. Strong gum, card, scissors.

Activity

The children can first spend time experimenting with different possibilities of arranging threads on a piece of card. The earlier activity of exploring the different ways string can be used by unravelling, knotting, making tangles etc. will help them to use the special qualities of string in original ways.

When they have chosen a final design, the children can stick it down. They can make designs, patterns or pictures.



Note: Children could plait threads, strings or wool and use these to make a border or as part of their design.

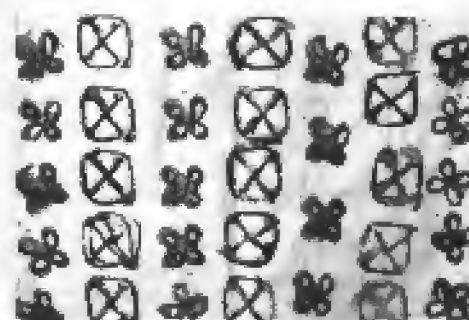
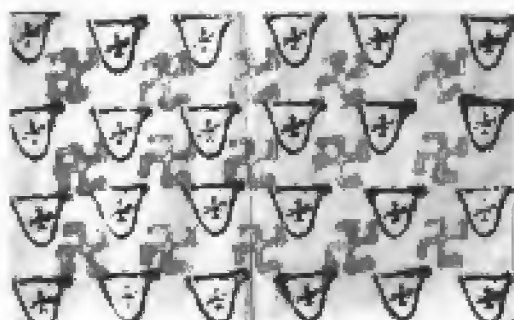
String prints

Materials

String, wooden blocks, gum.

Activity

The children can make printing blocks by making a design with a piece of string on one face of a wooden block and sticking it down firmly. Paint can be applied on the design and used to make patterns on paper.



Cloth collage

Materials and preparation

Pieces of cloth and thread can be collected from tailors and stored. These are often very small pieces and would not require cutting.

Card, gum.

Activity

The collage could have a theme such as two colours or rough and smooth materials. Alternatively, the children may like to make a picture or figures.

Older children could stitch the material instead of sticking it with gum and add other materials such as bits of ribbon or lace if available.

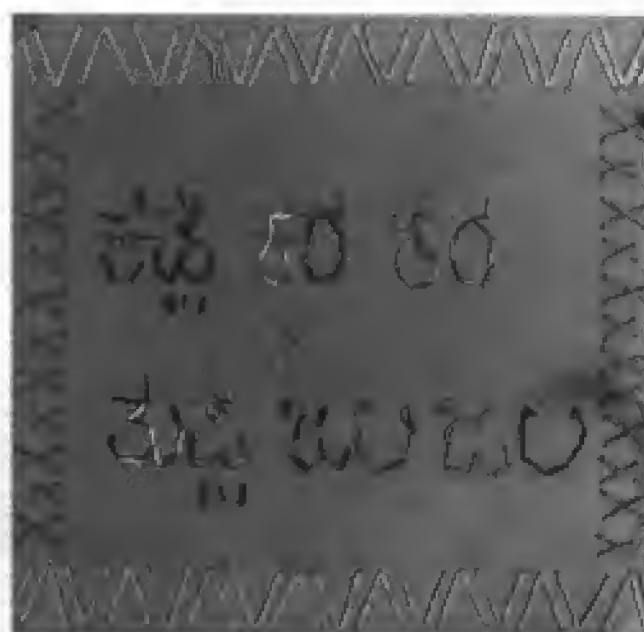
Stitching

Stitching on cards

The children can stitch on a card that has a simple pattern on it and holes pierced with a needle at regular intervals. A blunt needle that has been threaded with double skeins of crochet thread can be used and the stitching could be also done by using a running stitch in different colours. Make sure that all the threads finish on the back of the card and the front is neat.

The designs could be drawn either by an adult or by the children themselves.

Two lines of a poem can be written in large letters on the card and then stitched.



Paper

Paper can be used as a surface in many ways for drawing, painting, making collages etc., but it can also be used as a medium itself. It can be torn, folded, cut, twisted, rolled and shaped to make models, sculptures and decorations.

Waste paper and even one-sided used paper is easily available and there are many ways in which it can be used. A number of the activities below use old newspaper and magazines. These can be collected and stored for use. Cards, boxes, pieces of silver and gold paper and used coloured paper can be collected.



Basic skills

These skills are best learnt when used in a context and they serve a function that is within the child's interest and grasp.

Tearing

Tearing is different from just ripping paper. Tearing needs practice and requires care and time. It is particularly important to learn that a short and slow pulling action gives maximum control when tearing.

Children will begin to notice that different kinds of paper are best torn in particular ways. Newspaper, for example, is much easier to tear vertically than horizontally.

Children can begin by practising to tear paper in pieces for paper mosaic work. Papier maché also requires paper torn into approximately the same sized pieces.

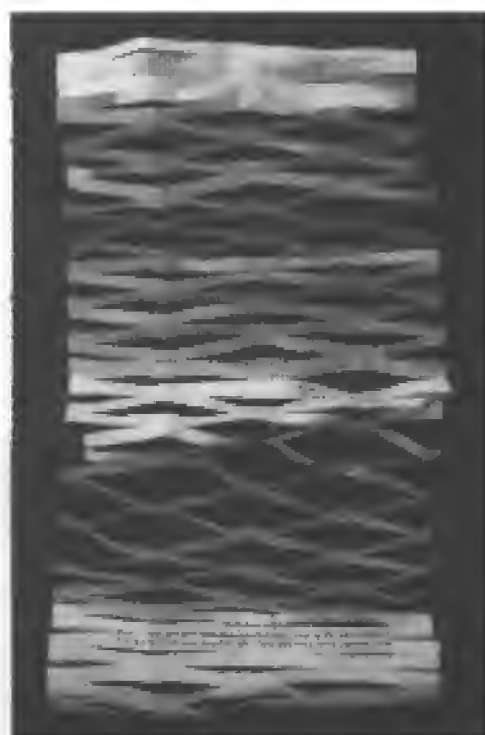
Gradually, the children can have practice in tearing out shapes in a continuous movement. The pieces can be used for making collages or mosaics.

The children can experiment with tearing different kinds of edges; for example, a wavy edge, rough or zigzag edges.

Cutting

Cutting with scissors is a skill that nearly all children want to learn. Cutting pictures and shapes from newspapers helps the child improve control and precision. Several steps are involved in becoming skilled:

- ♦ Holding the scissors correctly;
- ♦ Turning the paper to allow cutting;
- ♦ Cutting in even strokes.



Pasting

Pasting is also a skill that needs practice. Children should learn to use the minimum amount of paste. They can be helped in observing how much paste to spread and the importance of pasting at the edges. It should be ensured that paste and gum do not show on the finished piece of work.

If a brush is used, the children should take care to wash it immediately after use. Also they can be shown how to wipe the brush on the edge of the container. Simple paper chains can be made for practice.

Folding

Many different things can be made by just folding paper. However, in selecting particular exercises, it is important that children can work as independently as possible. If the teacher is doing most of the work or the majority of children cannot manage alone, then the activity is too difficult and some easier task should be selected.

Certain basic skills in folding, creasing and cutting have to be introduced gradually within a context of making or doing something meaningful. In this way, children feel confident and competent and are also ready to learn something new.

It is important to work on a flat and smooth surface.

A few simple exercises in tearing, cutting, pasting and folding are given below, but there are many possibilities to be found in other books. See suggestions under Useful books at the end of this book.



Activities

1. Tearing shapes

A theme such as animals could be taken. The children are asked to tear a shape without drawing it first and then decide what animal or monster it reminds them of. These can be the basis of a collage and the children could paste the shapes on to a background paper either individually or in groups to make a frieze. They can add features with crayon, thread or other materials.



2. A scrapbook

Once children are able to handle scissors, they can be encouraged to keep a scrapbook. Pictures from old newspapers and magazines can be selected, cut out and pasted.

A particular theme might be chosen, such as different materials. Small groups could each collect pictures related to a particular material – things made of wood, stone, glass or metal. These pictures could be cut and pasted into a book that could be shared and used with other children and could be added to the school library.

Older children could make scrapbooks for younger children in the school.

3. Flowers

Fold a piece of paper in half.

Fold a crease about 1 cm. from the top.

Make parallel cuts as far as this crease.

Put the two edges together and paste to make like a cylinder.

The two ends can then be pasted together.

Use thread to hang the flower.



4. Making a spiral

Materials

Plain paper, scissors, thread.

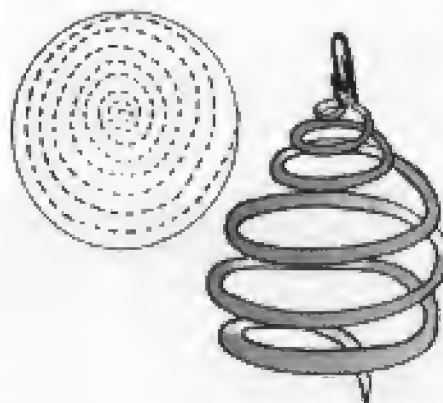
Activity

Take a plain piece of paper and cut a circle of any size.

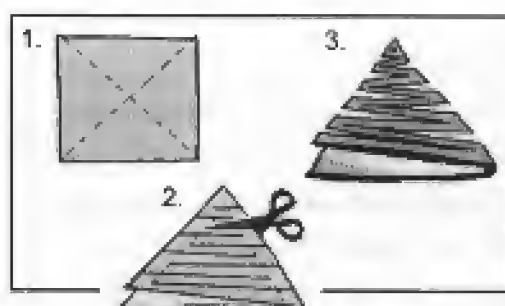
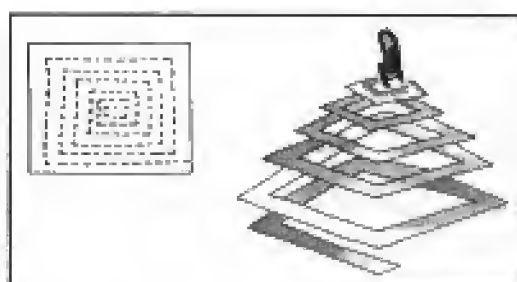
Starting from the centre draw a spiral as shown in the diagram.

Cut along the lines.

Hang from the centre by a paper clip.

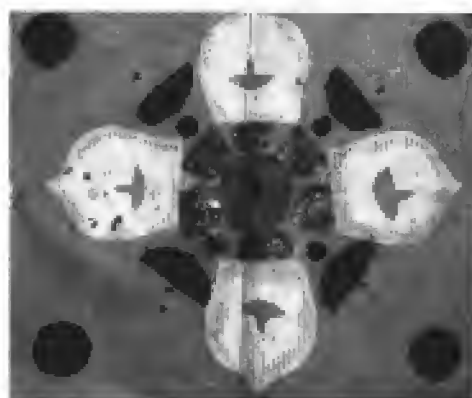


Note: Alternatively a square or triangular spiral can be drawn, cut and hung.



5. Cut-outs

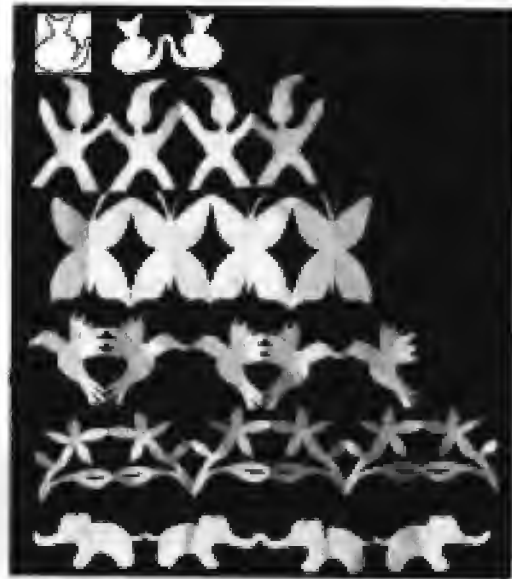
The children can fold different shapes such as squares, circles or triangles into quarters and then eighths and make cuts. These can be opened and pasted on coloured tissue paper or any paper of a contrasting colour.



6. Concertina patterns

Repeating patterns can be made by carefully folding a strip of paper backwards and forwards.

A shape such as a star, a crown, an animal, a bird or a flower etc., Can be drawn. This should be done in such a way that there is a connecting part. The folded paper is cut and then opened.



7. Butterfly

1.2.3. Fold as shown in diagrams.

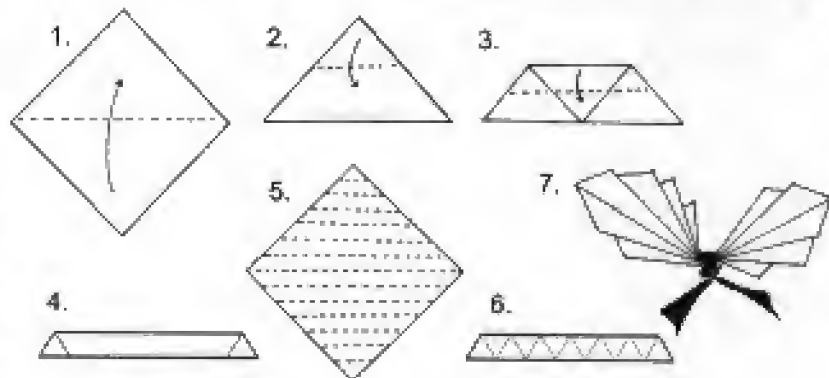
4. Fold from top to bottom twice more.

5. Unfold and lay flat.

6. Pleat the paper on creases.

7. Staple in the centre. Spread out the folds.

8. To make a butterfly, fold one more bow of a smaller size and then fasten the two bows in the middle with ribbon. Add paper "feelers".

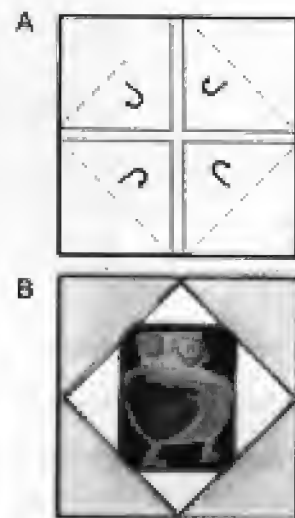


8. Frame for a picture

1. Take a square piece of paper.
2. Fold on the diagonals.
3. Fold the corners towards the centre.
4. Turn over and repeat.
5. Turn over and fold the four squares inwards to form triangles (see diagram A).

This becomes the frame and a small picture can be placed within the corners (see diagram B).

Note: Instructions 1-4 follow the same method as the paper toy called *din-raat* or *kum-kum battabi* in Karnataka.

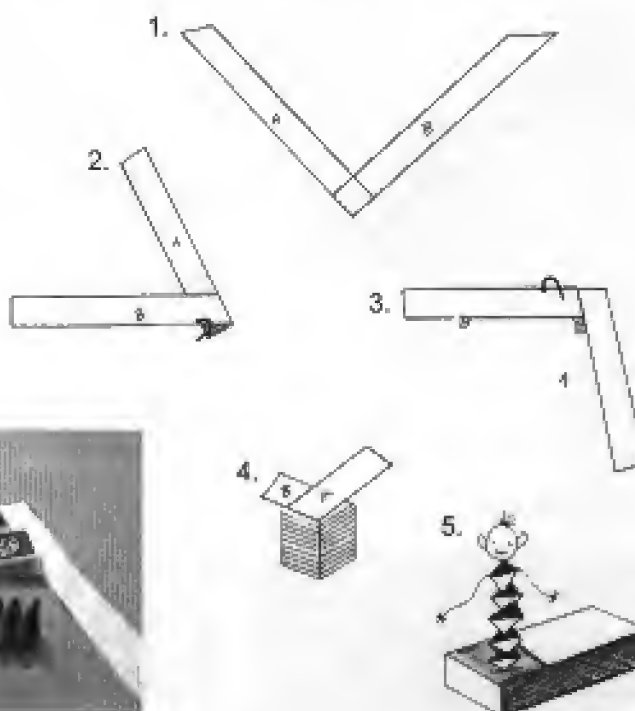


9. Snake

1. Take two thin strips of card 1 cm. wide and 15 cms. long and glue together at the bottom so that the strips are at right angles to each other.
2. Start folding strips together one over the other.
3. Keep folding until the length of the strips is used up.
4. Paste the head of a snake on top of the strip.



Alternatively, to make a pop-out figure, paste the bottom of the strips to the base of the inside of the matchbox.



Press the folded strips in the matchbox and close the lid.

When the matchbox is opened, the figure will pop out.

Note: An easier alternative for younger children is to fold a paper strip like a concertina. Paste an animal or bird to the end of the folded strip and paste inside a folded card so that it opens up.

10. Paper bead necklaces

Purpose

This activity gives the children practice in the skills of cutting, folding and pasting, and at the same time has a purpose, and they enjoy making something to use, display or give away as a gift.

Materials

Thrown-away coloured magazines.

Scissors, toothpicks or pencils, thread, needles.

Activity

Paper strips are cut from coloured magazine pages measuring about 25-30 cms. in different shapes (see below).

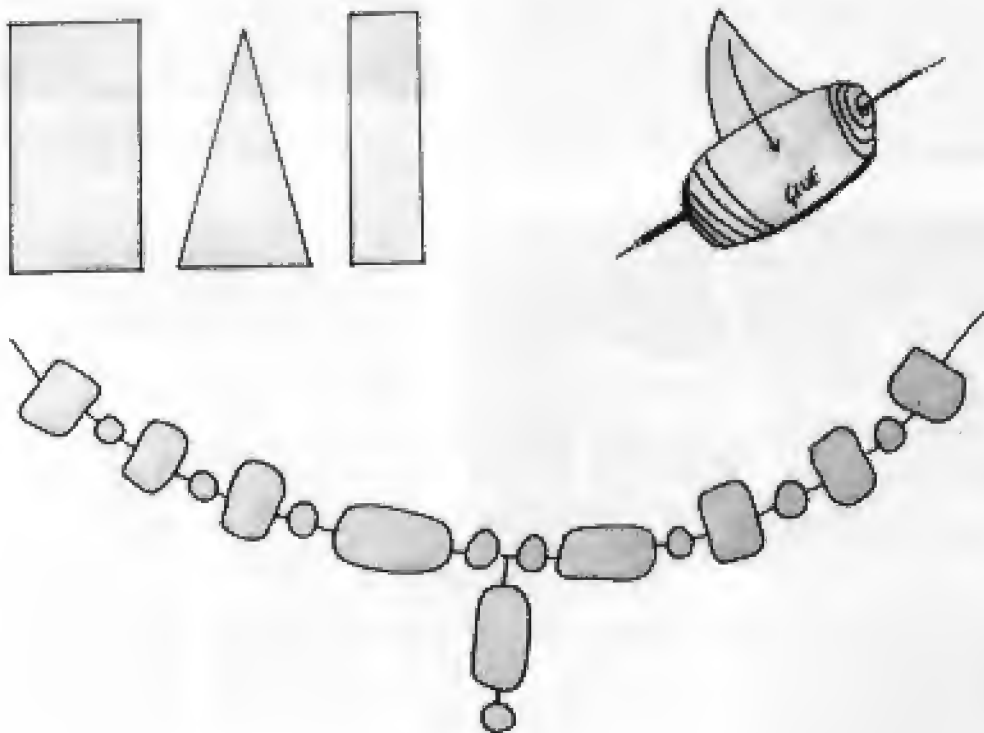
The paper strips are rolled over toothpicks or pencils. If using triangular shapes, begin rolling with the wider side.

The strips are rolled to the end and glued down.

When dry, the beads can be painted with clear varnish.

Remove the toothpick.

String paper beads together with a needle making a pattern by using the different shapes. Small glass beads can be used between the paper beads.



11. Newspaper sculpture

Materials

Newspaper, paste, paint.

Activity

The children are provided with several sheets of newspaper.

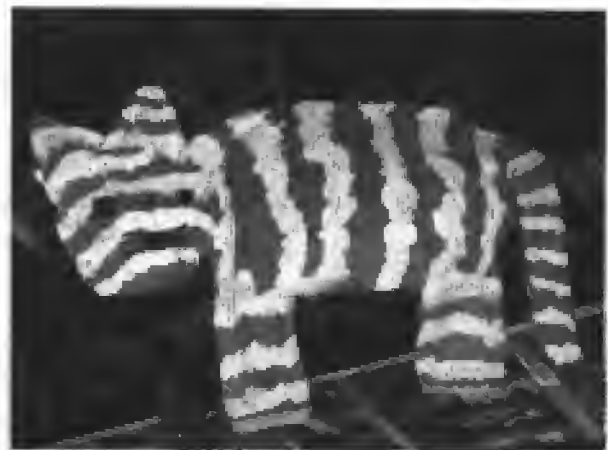
They can be shown how to tear newspaper vertically to form some strips.

The children take a single sheet of newspaper and crumple it to make a shape. The shape is then fixed by applying strips of newspaper with paste.

Head, legs, wings and tails etc. can be made by crumpling paper and applying strips of paper and then attaching them to the main body with further strips of newspaper.

Features can be added with paper and thread.

Finally the animal or figure can be painted and varnished.



Stuffed, pasted and stitched models from layered newspaper



Note: A theme such as birds, monsters, dinosaurs, insects or animals could be given.

12. Paper rolls

Materials

Newspaper, old magazines, gum and background paper.

Activity

Cut sheets of newspaper and coloured magazine paper into squares of different sizes.

Roll the squares of paper tightly and fix with gum.

Make a number of rolls of different lengths and thickness. Some hollow sticks can also be made.

Arrange on a background of black or brown paper to make a design and then paste.



Note: If available, magazine sheets are easier to roll and hold their shape better.

Paper mosaic

This is an activity that is best carried out in small groups of four to five children.

Materials

Small pieces of coloured paper from magazines, thrown-away paintings, kite paper etc. Gum, background paper.

Note: It is important to collect different shades of colours and a variety of textures to make a more interesting picture.

Activity

Sort paper into different colours and store in plastic bags.

A theme may be given and the children can draw an outline on a large piece of paper or a picture could be made to illustrate a story.

The children decide on one colour for one area. Different shades of that colour are torn out into pieces. The pieces should not be too small; for example, about the size of a one rupee coin.

Gum is applied to the paper and the torn pieces are stuck to form a mosaic.

When all the areas have been covered by paper of different colours, a black outline can be painted around the figures to highlight them.



Pâpier maché

Newspaper and *maida* paste are very cheap materials. They offer many possibilities for making masks, containers or models.

Materials and preparation

If possible, collect local language and English newspapers. By using these alternately, it is easier for children to see where the different layers begin and end. The paper should be torn into small pieces and kept separately.

Maida paste.

Bowls or pots for moulds.

Children can work together in pairs or small groups, depending on the size of the objects made.

Activity

The children apply grease to the surface of the mould which could be a steel bowl, a steel plate or an inflated balloon.

They carefully apply one layer of newspaper pieces that have been dipped in water on top of the grease. This makes it easier to separate the newspaper layers from the mould.

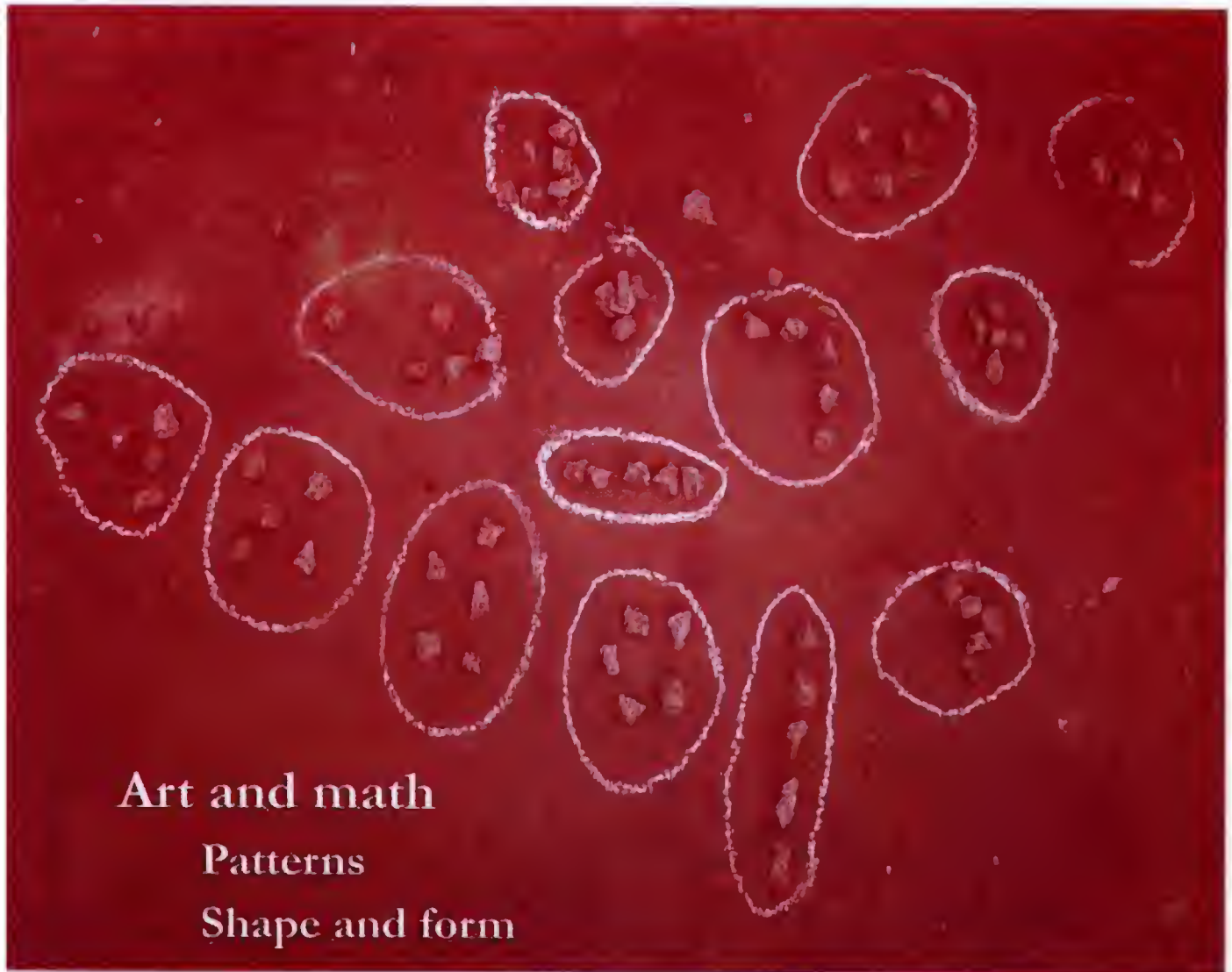
The children then alternately apply a layer of local language newspaper and of English newspaper with paste. It is important to take care to make a smooth surface and not to have lumps. After two or three layers, the newspaper and paste should be allowed to dry in the sun.

Then two or three more layers are applied and allowed to dry. Then the last two or three layers are applied.

When this is dried, the newspaper shape is pulled or if necessary cut away from the original mould.

The shape is then painted. Alternatively, a layer of pieces of different coloured kite paper or crepe paper is pasted. When this has dried, the bowl can be varnished.





Art and math

Patterns

Shape and form

Understanding relationships between things is basic to math. Through this the child begins to recognise patterns as well as concepts of space, boundary, direction and rotation. Both serve as the foundations for counting and measurement in math.

By sorting, ordering, comparing and matching things according to colour, size and shape, children learn to observe things more closely. They develop skills in identifying similarities and differences. It is important for children themselves to suggest different ways of sorting the same set of objects. Seeing the relationship between what has been sorted and ordered is a preparation for the children to make their own patterns using number, size, shape and colour through a variety of media. They also become familiar with terms of orientation such as left and right, up and down, north and south, half-turn and full-turn.

The section on shape and form gives children various opportunities to explore regular and irregular shapes. Making three-dimensional structures gives children an experience of area, space, length and measurement.

Children approach the topic of symmetry through observations in nature, their surroundings and their own bodies. They develop the concept further through creating their own symmetrical patterns.



Patterns

Relationship: comparisons and matching

Pattern in relation to size

Patterns and shape

Patterns with numbers

Patterns are part of our everyday lives. Like the air we breathe, patterns are all around us but we often do not notice them. If a teacher asks young children, where they have seen patterns, the teacher is likely to get an eager response. The children may have noticed the stripes on a squirrel's back, the stars on a tortoise shell, the spots on a ladybird or the rings on a fallen log. A walk in the neighbourhood may further alert them to many examples both in man-made objects and in nature. By looking carefully at the wide variety of patterns children begin to understand the order and beauty of the world. The formation of letters, the "ragas" in music, the steps of a dance, all have their base in patterns.

This work with patterns is repeated in different ways using a variety of materials. These include:

- drawing with pencil, crayon and paint,
- using collage,
- making rubbings,
- making constructions, and
- using printing methods.

Gradually the children come to understand different relationships in patterns and this awareness helps in mathematics..

Relationships: comparisons and matching

Purpose

Matching and sorting activities are often quite naturally part of a young child's play. These exercises build on a child's concepts of colour, shape, size and texture and help to develop the appropriate language to describe these experiences. Such activities begin to lay a foundation for logical mathematical thought.

Materials and preparation

The teacher could ask the children to gather the necessary materials, such as leaves and stones, the day before the lesson or during the lunch break.

Space and time

The teacher could discuss with the children a sorting activity as a whole class activity but later these exercises are best done individually or by groups of two to three children.

A few children could take turns to do these more practical activities during the math class while others are engaged in written work.

A corner of the room could be cleared so that children could work on the floor or, alternatively, they could work on the veranda.



Activity

Shells, stones, leaves, seeds and buttons can be sorted in different ways according to size, texture, colour or shape.

It is important for children to explore different ways of sorting the same set of objects and to find that there are many ways of classifying things. The children may suggest unusual categories which the teacher has not thought of; for example, with a collection of leaves:

- pointed and not pointed leaves,
- leaves with a jagged edge and a smooth edge,
- leaves that goats eat and ones that goats won't eat,
- leaves in the garden and leaves from outside the compound,
- leaves that are flat and ones that curl up, etc.

Pattern in relation to size

Purpose

These activities focus on size – length, width and height. The children may not be familiar with standard measurements such as meters or centimeters but these are preparatory exercises and provide an opportunity for children to handle and sort concrete materials.

Materials and preparation

Before the lesson, the teacher should identify a suitable tree or bush that has leaves with a range of sizes and is also accessible to children.

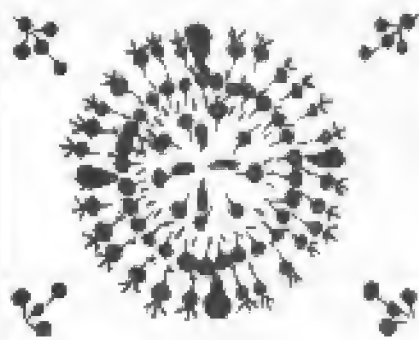
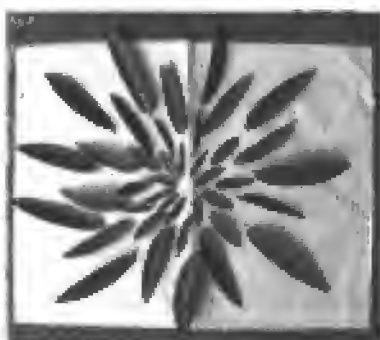
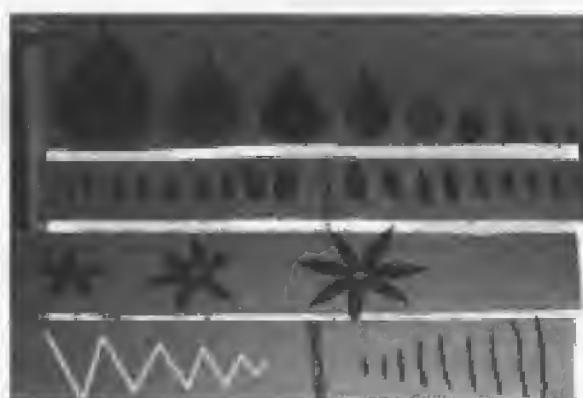
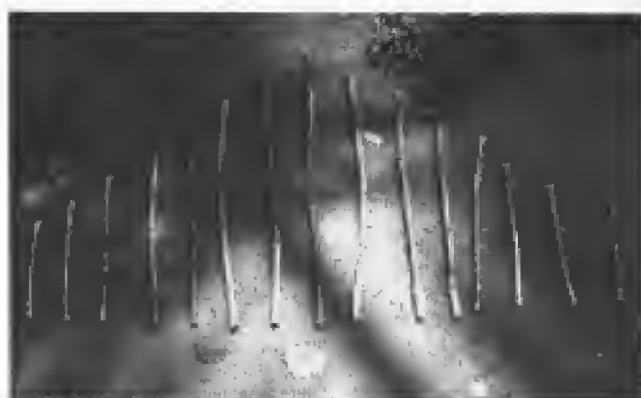
They could be asked to collect stones or sticks on the way to school.

Space and time

This activity could be done outside, on the ground or on the floor depending on the weather. The children could work in small groups or individually over a class period. They should be asked to look at each other's designs before the end of the class.

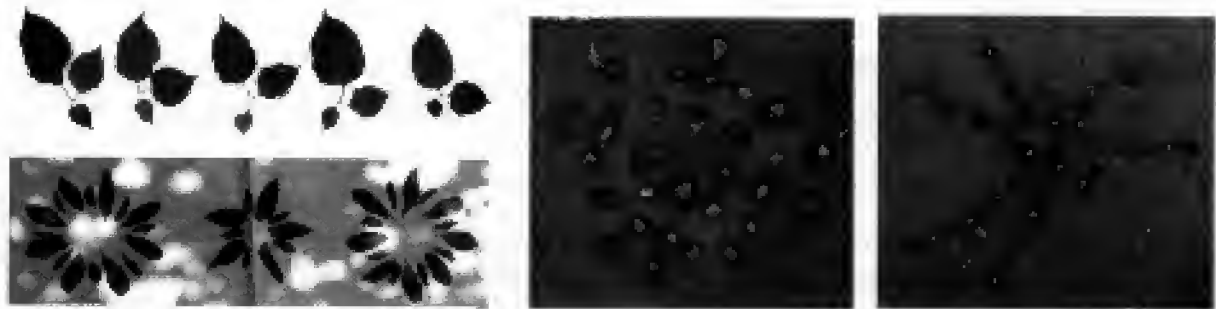
Activities

1. Break sticks into different lengths. Place them in order, from the shortest to the longest. Then rearrange in a pattern.



2. Collect leaves from one particular plant and sort into three groups according to small, middle-sized and large leaves.

These could be then used to make patterns.



A similar exercise could be done with sticks. These could be sorted into short, middle-sized and long sticks and then used to form patterns either with or without leaves.



3. Ask the children to draw a series of five balls that increase in size. (This exercise could be first mimed and then done on slates or on the blackboard or with clay.)

Patterns and shape

Purpose

In previous exercises, the children have been encouraged to observe and sort objects according to shape and size but in the following activities, they construct and draw shapes to create their own patterns.

Preparatory activities

Looking at patterns (see p. 28).

Materials and preparation

Sticks with different shapes could be collected from the surrounding area.

The children could be asked to bring coconut broomsicks from home. These could be cut into uniform sizes and stored in a suitable container for use when needed.

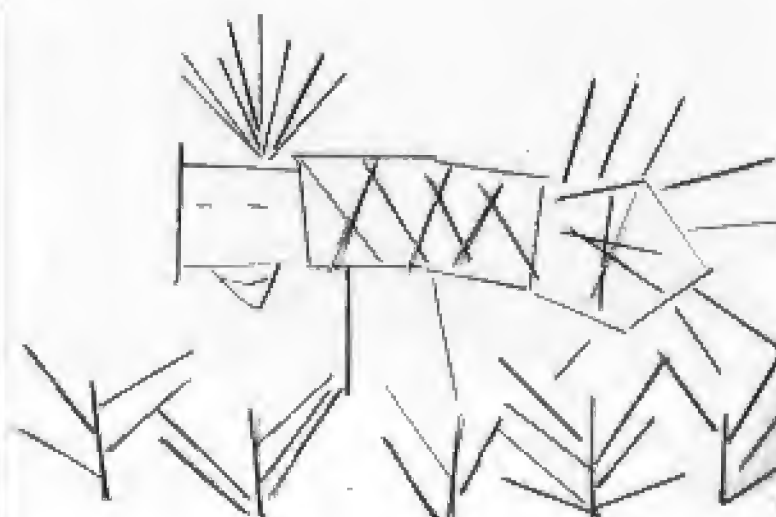
Space and time

These activities could be carried out on any flat surface inside or outside the classroom. Children could take turns to work individually or in small groups within the math class.

Activities

1. Sort a collection of twigs by shape – straight, curved and twigs with sharp angles. These could form the basis for pattern making.
2. Using uniform-sized sticks (matchsticks or broomsticks are suitable), the children copy a given design and create a repeating pattern.

The children can also make their own designs using the sticks. (These could be pasted to make a collage.) The designs could include both regular patterns and freer, less formal elements.



Patterns with numbers

Purpose

It is important for children to discover number relationships, such as more than, less than, same as etc. for themselves. Learning to count comes gradually and is best done in relation to practical activities where children touch and handle concrete materials.

These practical activities ensure that the child has space to experiment with numbers so that the gap between reciting numbers in sequence (one, two, three, four, etc.) and understanding quantities is bridged.

Materials and preparation

Natural materials available in the immediate neighbourhood such as seeds, leaves, seed pods, flowers, stones, etc. The designs are not required to be permanent and paper, gum etc. are not needed.

Space and time

These activities could be done outside or inside. A flat surface is required; for example, the floor or even the ground.

This could form part of a lesson and could involve small groups of children but not necessarily the whole class.

Activities

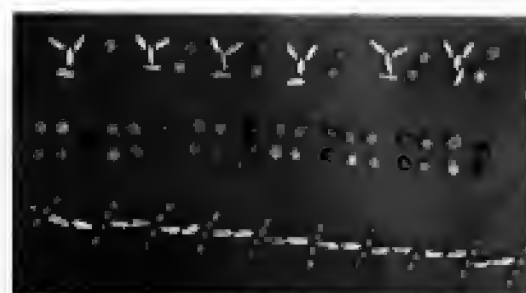
1. The children are asked to collect five leaves, five stones, five sticks, five flowers and make patterns on the ground with these objects (see p. 123).

The exercise can be varied by asking for sets of different numbers.

It can also be made more difficult by asking children to collect different sizes of the objects; for example, three big stones, three small stones, three big leaves, three small leaves and three flowers.

2. With two contrasting seeds, make patterns based on numbers.

Example: 3 1 3 1 3 1 or 5 3 5 3 5 3 etc.



Shape and form

Introductory activities

Irregular and unusual shapes

Body outlines

The circle

Four-sided figures

Three-sided figures

The tangram

***Rangoli* designs**

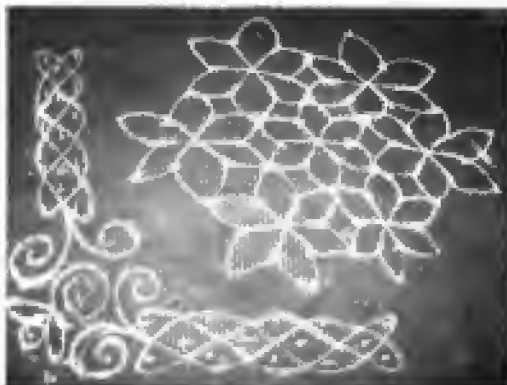
Three-dimensional constructions

Balance and symmetry

Tessellations and other patterns

Through the activities in this section, children are encouraged to observe shapes and shapes within shapes in the immediate environment. By experimenting with regular and irregular shapes children develop skills in making their own designs. Through exercises with three-dimensional structures, children further develop skills of spatial awareness and creativity in construction.

The exercises on symmetry build on the young child's natural sense of balance that is already often visible in the composition of children's first paintings and drawings. The child's first pictures of a human or of a house, for example, are nearly always symmetrical. The exercises in tessellations help children to understand the way shapes relate to each other and build on the earlier exercises that explored patterns.



Introductory activities

Purpose

These activities are to encourage children to be aware of the variety of shapes around them. Through these activities children also begin to build up a vocabulary to describe different shapes. Children are asked to observe shapes in the immediate environment and also to construct shapes.

Vocabulary

Circle, square, rectangle, triangle, straight, curved, zigzag, round, spiral, edge, corner.

Preparatory activities

Looking at shapes
Body shapes
Matching leaves

Patterns and shapes
Hand and foot cut-outs

Time

These activities could be a part of the math class over one or two weeks.

Questions for discussion

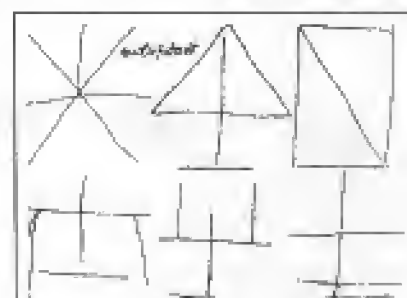
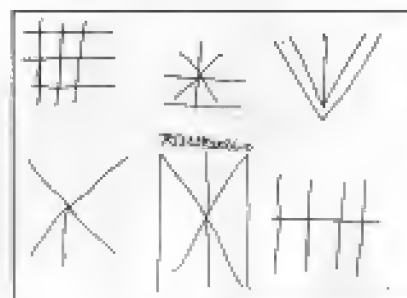
- Look around and discuss the different shapes in the classroom. What other shapes could the classroom be? What would be the problems and advantages of a round classroom? A triangular classroom?
- Look at the shapes of leaves, flowers and seeds. Make a collection of leaves and sort them according to basic shapes.
- Look at a cycle and think about the shapes of its different parts.
- Where can we see circles/spirals in the classroom? In nature?
- Where can we see triangles/squares?
- What shapes can we see in a building? What different shapes of buildings have you seen?

Activities

1. The children could take the topic "circles" and draw and label objects that are round and together make a chart. Alternatively, a circular book could be made and stitched and each child contributes a picture of something round.

Similarly a chart or a book could be made of triangles or rectangles that the children can see in their environment.

2. Using four broomsticks of equal length, make different shapes. The children could copy each shape on to a slate or draw in a notebook. Similar exercises can be done with five or six sticks.



Irregular and unusual shapes

Purpose

The following creative activities are suggested to help children make and reflect on random shapes and also to imaginatively extend given shapes.

Materials and preparation

Plain paper, paint, straws.

Space and time

It would be advisable to do these activities on the floor.

The following activities would require about one hour each.

Activities

1. Blow paint

Random shapes can be made by using paint blobs in the following way:

Place a plain piece of paper on newspaper (either on the floor or on a table).

Drop a blob of paint of one colour.

Gently blow and see how it spreads. (A straw can be used.)

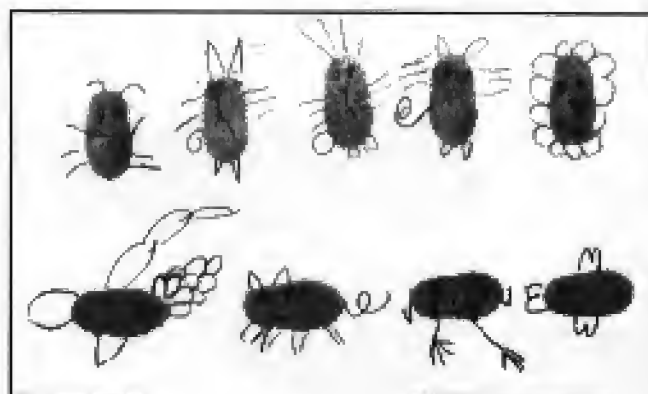
Repeat with the same colour or add one or two more colours until the design is finished.



2. Finger and thumb prints

Using the thumbs and fingers, the child can make designs by putting ink or colour on them and applying to paper. Lines and details can be added using a ball-point pen.

The fist, fingers and thumbs can be used to make prints and the basic shapes.



Related Activity: Leaf designs (see p. 80).

Body outlines

Purpose

The children explore the outline of the human body and also use the shapes of the hand and the foot to make designs.

Materials

Large sheets of bleached newsprint.

Crayons, paint, containers for paint (lids/shallow bowls/coconut shells).

Activities

1. The body outline

Two layers of newspaper are pasted together with *maida* and allowed to dry.

Three or four sheets of newspaper are pasted together to make a large sheet.

The large sheet is laid on the floor and one child lies down on it. Another child draws around her making an outline with chalk or charcoal.

The shape is then cut out.

Working in small groups the body is painted to show facial features and clothes.

The final life-size picture can be put on a door or wall.

Note: Children can lie in different positions to give a variety of poses.



Related activity

Hand and foot cut-outs (see p. 29).

The circle

Purpose

The form of the circle is introduced in a variety of ways through movement and practical activities.

Materials and preparation

Newspaper, waste paper, old magazines.

A variety of used strings and threads collected by the children and kept in a container, gum.

Space and time

The introductory activities should be done outside in an open space.

Introductory activities

- The children are asked to stand in a straight line and then form themselves into a circle or a semi-circle.
- Which parts of the body can you use to form a circle?
- Run round in a circle.
- The children look for circles in nature and in the environment.
- Draw a circle and an oval shape on the board and ask the children the difference between the two.



Selection of round objects



Finding curves in the body

Activities

1. Paper garland

Cut circles of tissue paper and fold four times. Shape the edge.

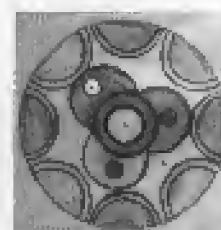
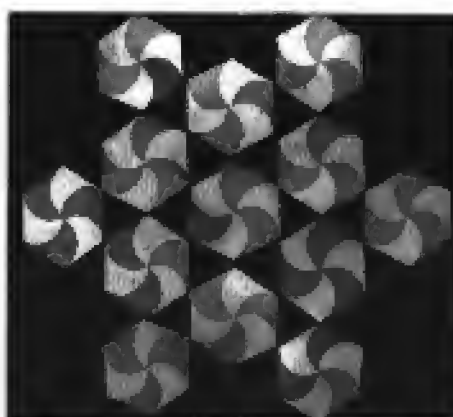
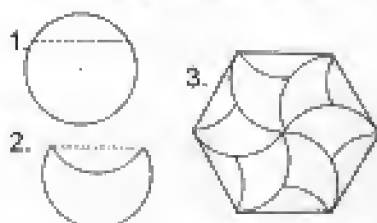
Place two or three layers together and twist together to form a stalk.

The paper flowers can be threaded to form a garland.

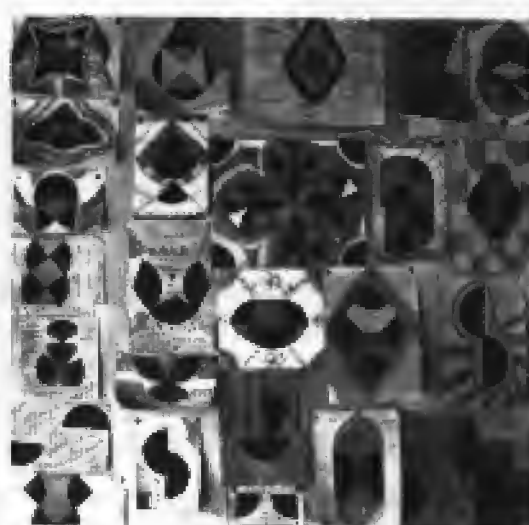


2. Using different media – pencil, pen, paper, thread, string, paint or crayon – make a collage using the theme of circles. The circles can be of varied sizes and can overlap to create interesting designs including tessellations.

3. By cutting circles of two colours and folding one edge to the centre, patterns can be made by overlapping the shapes.



Pattern of concentric and overlapping circles



Parts of a circle cut and rearranged to make designs

Four-sided figures

Purpose

The children are introduced, more formally, to four-sided figures and through activities learn about their properties.

Materials and preparation

Newspaper, waste paper, old magazines.

A variety of used strings and threads, gum.

Regular shapes of different sizes can be cut and kept ready. Older children could help in this.

Space and time

These activities would need a double lesson or about an hour.

Activities

1. Strips of paper/newspaper of different lengths and widths can be used to make a design of horizontal and vertical lines.
2. Using different media – pencil, pen, paper, thread, string, paint and crayon – make a collage using the theme of squares.

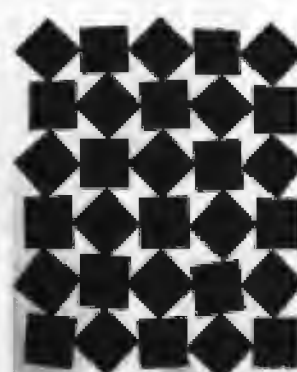
The squares can be of varied sizes and can overlap to create interesting designs.



Patterns of overlapping squares



Forming a square



Pattern with squares

3. A snake collage

The children can be divided into groups of three or four.

Each group works on a section approximately 35 cms. x 10 cms., choosing one shape, and makes a design from different sizes and colours of that shape.

Finally, the finished rectangular shapes are placed together to form a long snake with the beginning and end shaped to make a tail and head and stuck together. The shapes are displayed on the wall or round the sides of the door.



Three-sided figures

Purpose

Children can explore the qualities of three-sided figures, through observation, drawing and constructing triangles and making designs, to see the relationship of triangles with each other and other shapes.

Materials and preparation

Plain paper; if possible, two contrasting colours.

Crayons for colouring, if necessary.

Scissors, gum, rulers and pencils.

Activities

The children are asked to form triangles with their bodies, for example, with their fingers, the arm on the hip, legs apart on the ground, etc.



Ask the children to draw a freehand triangle on their slates.

(Probably the triangles will be close to equilateral triangles.)

Ask the children to draw another very different looking triangle and look at each other's drawings. Are they all triangles?

The teacher then draws an obtuse angled triangle on a slate and asks the children if this is a triangle. If there is a doubt, the teacher can rotate the triangle to show it from a more familiar view.

The teacher asks the question, "What do all triangles have?" After some discussion, the teacher and children can look in the classroom and the immediate environment for triangles.

The children are asked to draw a square or a rectangle and to draw a line that will turn it into two triangles. Can they draw two lines to make three triangles? The children may come up with several solutions.

The teacher draws an open three-sided figure $/ _ \backslash$ and asks the children if this is a triangle. If it is not a triangle, why not?

The teacher draws a three-sided figure with one curved line joining at the base.

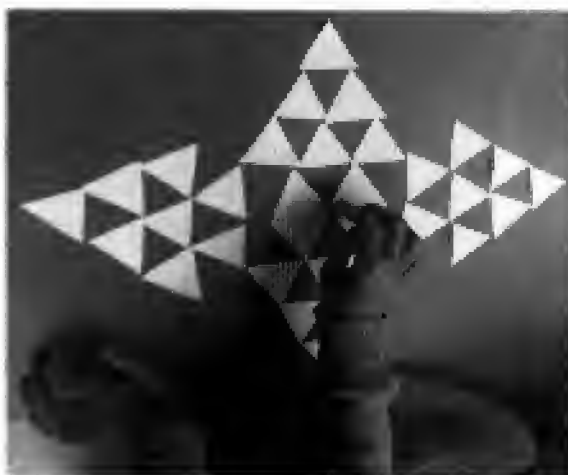
The same question is asked. Is it a triangle and if not, why not?

The children are asked to draw a triangle and cut it out and trace round it to make another identical triangle. Each child cuts out 24 triangles, using two contrasting coloured papers. Alternatively, use white paper and one other colour. The children are then asked to make a design with the triangles. The triangles might be used as a tessellation (i.e. placing the triangles next to each other with no gaps) or placing the triangles with spaces between them.

Finally, the children could paste their designs onto paper.



Tessellations with cut-out triangles



Related activity

Tessellations and other patterns (see p. 122).

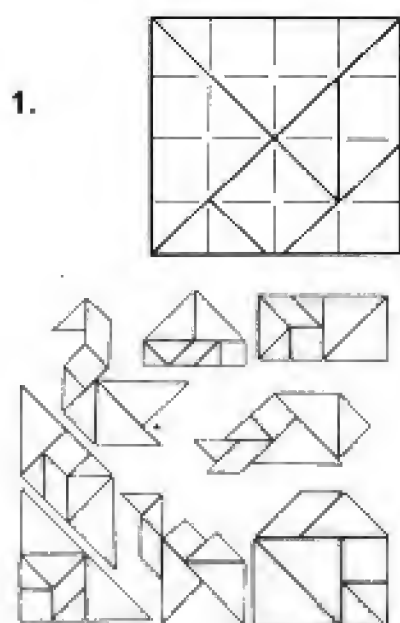
The tangram

Purpose

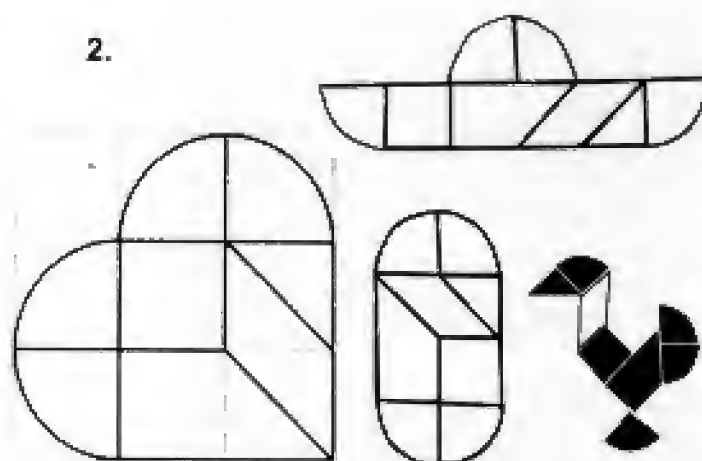
These puzzles help children to recognise two-dimensional shapes and to discover their properties. The skills of cutting, matching and simple measurement are also practised.

Activities

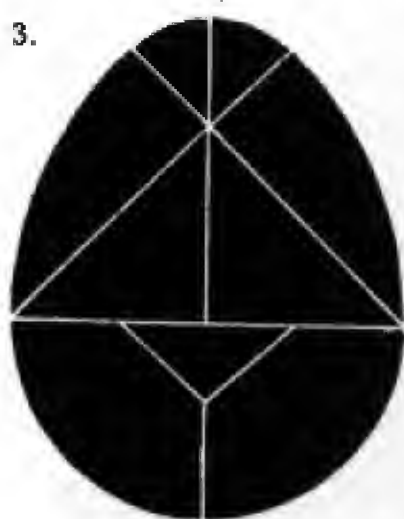
These three puzzles can be constructed or copied and then cut out on card pieces. Each child could make his or her own set and keep the pieces in an envelope or cover. The children can try to copy designs or make their own geometric designs of animals, birds and people.



2.



3.



See Appendix III for diagram on how to construct the egg tangram with nine pieces.

Rangoli designs

Purpose

These designs are probably familiar to the children and provide an exciting and interesting challenge for children of all ages to think about shapes and patterns.

Materials

Slates, level ground, plain paper or dotted paper if available.

Activities

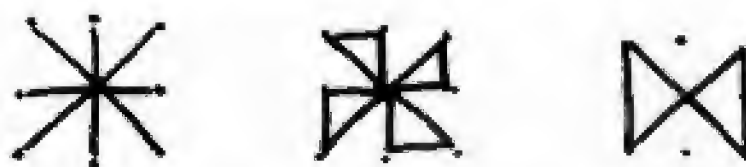
1. The children can be asked to draw patterns using four dots.



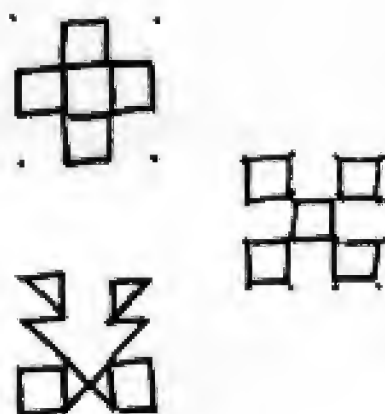
2. The children can be asked to continue the patterns.



3. The children can then be asked to make patterns on a 3 x 3 dot grid.



4. Next, the children could be asked to make patterns on a 4 x 4 dot grid.



Three-dimensional constructions

Purpose

The children can use three-dimensional shapes to further explore the relationship of shape and form. Such activities give them an experience of area, space, length and measurement and involve skills in comparison and matching.

Materials

Waste boxes of different shapes and sizes.

Waste paper, thread, white paper, gum, and scissors.

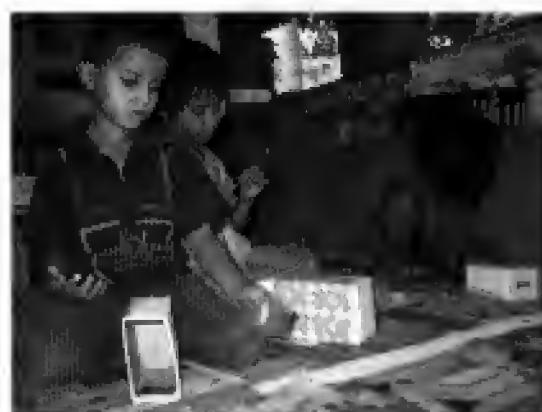
Activities

Making boxes

Each child is asked to bring a small box. The box is covered with white paper. Children are asked to decorate the box.

The children can change the colour of the base of the box by applying different coloured papers. They can then use paper cut-outs and paste on the box. A more interesting design can be made if the cut-out shapes are pasted over the edges and are not stuck only on one side.

In addition, or alternatively, the children cut strips of different sizes. These strips are folded in concertinas in different ways or rolled into tubes and then applied to the background paper before sticking to the box.



Making hats

The children could be asked to experiment and make a variety of hats.

The theme of the box or the hat can be used in the language class as a subject for imaginative writing or drama.



Balance and symmetry

Purpose

These are exercises for children to appreciate the patterns of symmetry. Both symmetry of reflection and rotational symmetry are introduced. The important idea of congruence is practically applied: where two shapes can be placed on top of each other so that the two coincide exactly.

Materials

Thick poster paint, crayons, paint brush.

Sheets of paper, newspaper, card, thin typing paper.

String, scissors.

Activities

Mirror prints

Fold a piece of paper in half.

Open it and drop big blobs of different coloured paints on to one side near the fold. A number of colours can be used.

Fold over the paper so that the clean half touches the painted half. Rub the paper hard all over with your hand.

Gently open the paper.

The children could be asked to look at butterflies and note the symmetrical patterns. The children's mirror prints could be made to look like butterflies by adding head and antennae.



Butterfly pattern

One sheet of thin typing paper is folded in half.

On one half a butterfly shape is drawn (see diagram).

The child makes a design on the butterfly outline.

The child traces the design onto the other half of the paper to make a symmetrical pattern.



String pull prints

Fold a piece of paper in half and then open it.

Dip a piece of string in thin paint and carefully place it on to one side of the paper, leaving one end of the string hanging over the edge of the paper.

Fold the paper in half and hold it down with one hand. Pull out the string hanging over the edge of the paper with the other hand.

Open the paper and note the pattern.

This process can be repeated with another colour.



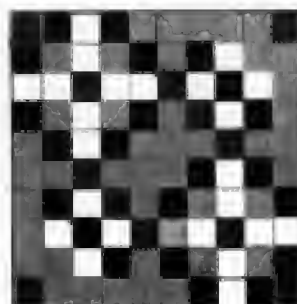
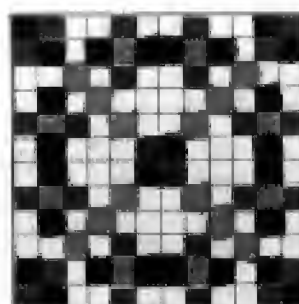
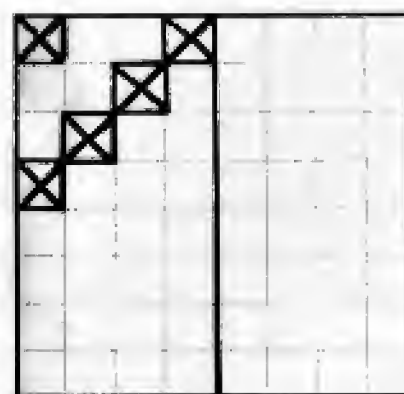
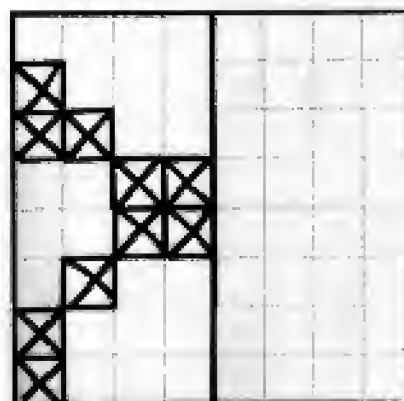
Symmetrical patterns

Divide a piece of squared paper (8x8 or 12x12 squares) in half lengthwise and create a pattern on one half of the grid. The children can complete the other half.

The children use a grid and make a pattern on one half and then exchange it with a partner for it to be completed.

Either squared paper or dotted paper can be folded in quarters. A design can be made in one quarter and then reproduced as a symmetrical pattern in the other three sections. (Note that different axes of symmetry are possible.)

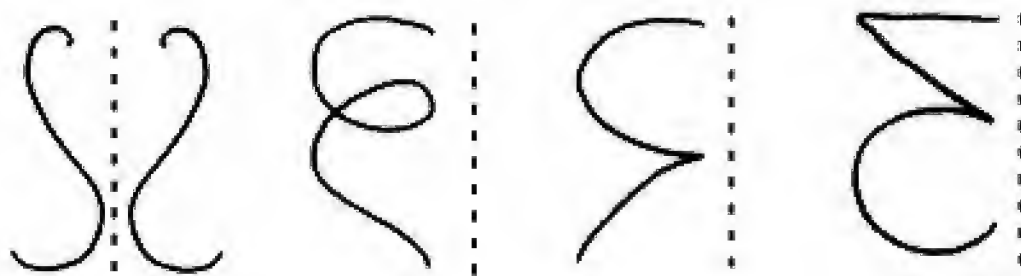
Children can make their own symmetrical patterns on squared paper using different axes of symmetry.



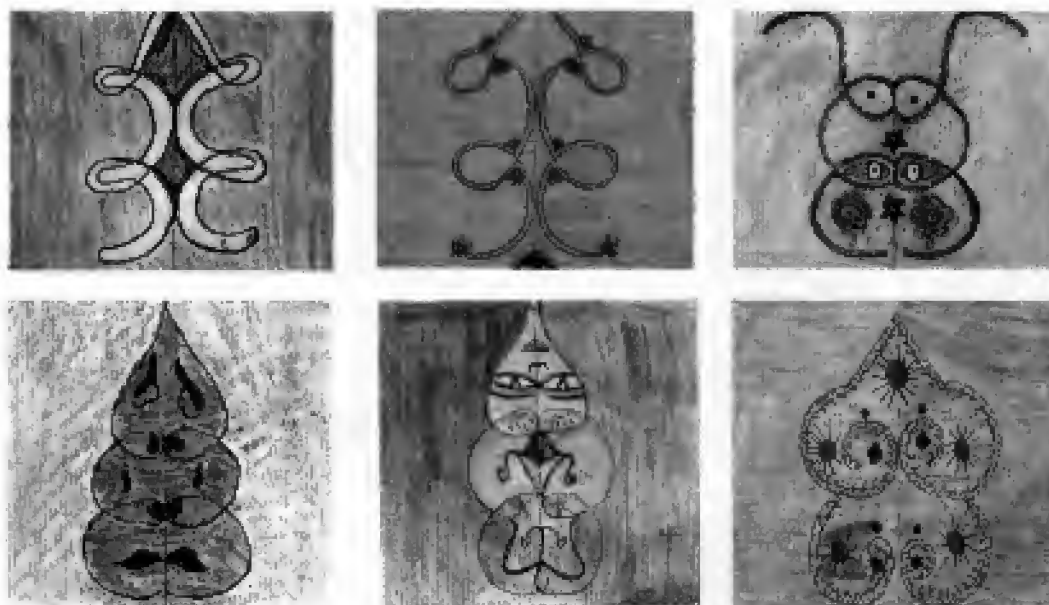
Lines of symmetry

Even young children can be asked to discover lines of symmetry for themselves. The teacher can make half of a design and the children complete it. The exercises can first be done with the hand in the air, on the blackboard or ground before practising on paper.

Below are given examples of left-right symmetry with a central vertical axis. Note that the designs begin very simply and become more complex.

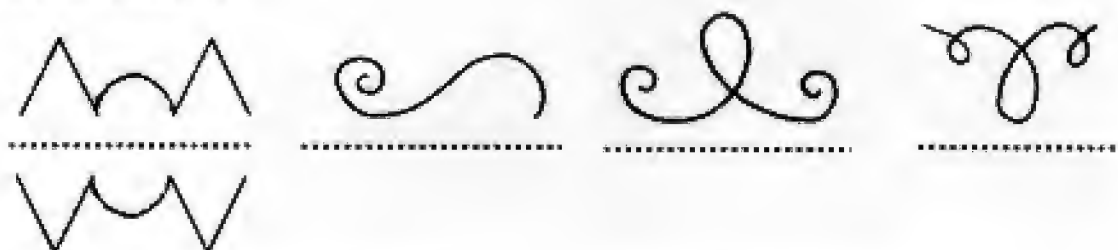


The children can build their own symmetrical patterns on these.



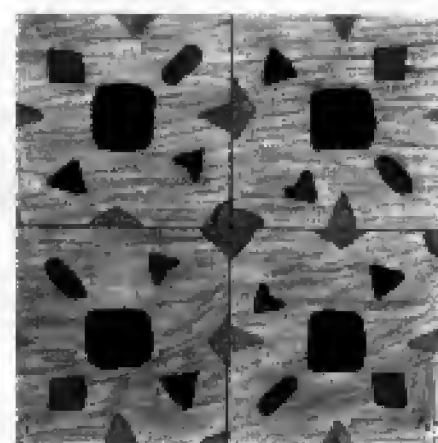
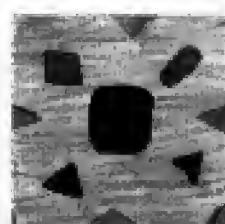
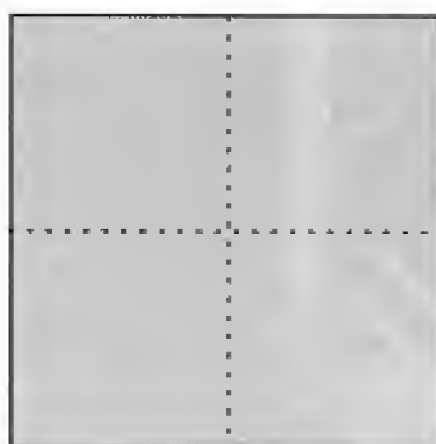
The children can also be asked to explore lines of horizontal symmetry by trying to imagine the reflection of an object or shape on the surface of the water.

Below are some examples:

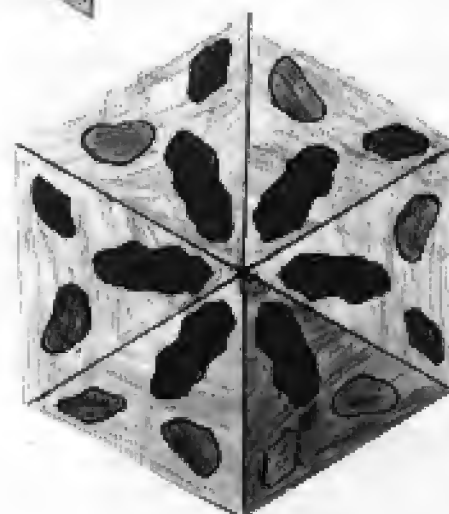
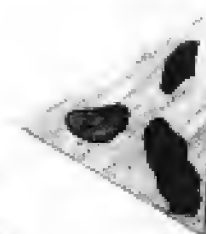


Rotational symmetry

- Fold a square piece of paper into quarters.
- Cut another piece of paper to make one quarter of the square.
- Cut out several simple shapes in the quarter.
- Rotate and make outline on the larger square and colour.



Two other variations using a circle and a hexagon.



Related activities

- String drop prints.
- Butterfly patterns.
- Collage with natural materials.
- Cut-out prints.

Tessellations and other patterns

A tessellation is a repeating pattern of shapes that fit together without leaving spaces in between.

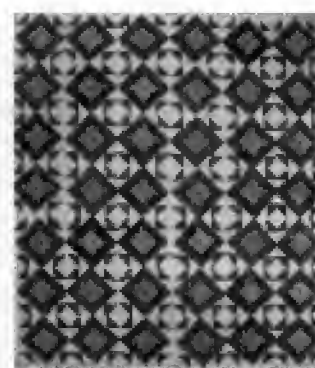
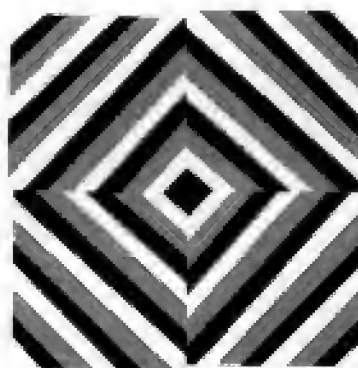
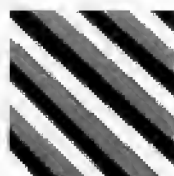
Purpose

Pattern-making gives its own satisfaction and delight but in addition children become familiar with regular shapes and their properties and learn how to construct them.

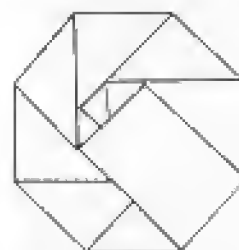
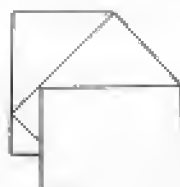
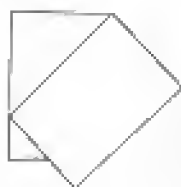
Activities

1. The children can use squared paper as a base to design shapes and patterns.

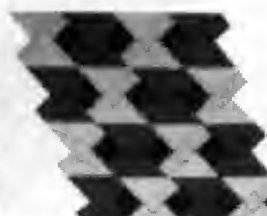
Sections can be done individually and joined to make a whole pattern.



2. A4 size paper (or any size but with the same proportions) can be used for creating pentagons and octagons by overlapping (see diagram). By using two contrasting colours of kite paper and pasting the design, beautiful patterns can be made and placed against the light. A sheet of transparent plastic can be used for display (see p. 123).



3. A4 size paper can be folded to make a kite shape and can be used to make interesting patterns.



4. Children can cut their own regular shapes and explore ways of tessellating them (see pp. 111, 112, 114).





Mirror faces



Cut-outs from a circle



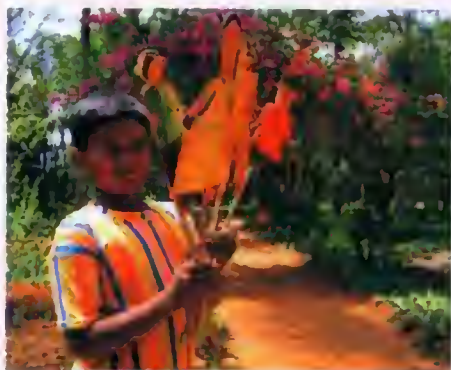
Patterns with A4 size paper



String prints



Pattern-making



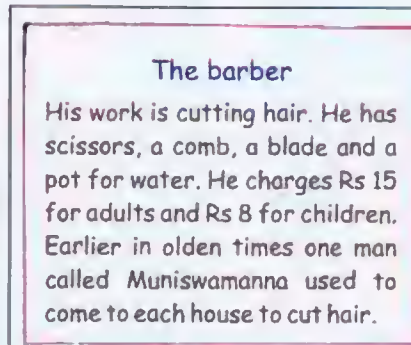
Stick puppets and masks



Story through a picture



Story with flaps



Going to the barber



Cone and pop-up puppets



Then Balraj kept Rs 5 on the floor and asked, "Why do I get fever so that my hands and legs get stiff every day?"

From the story The fortune teller



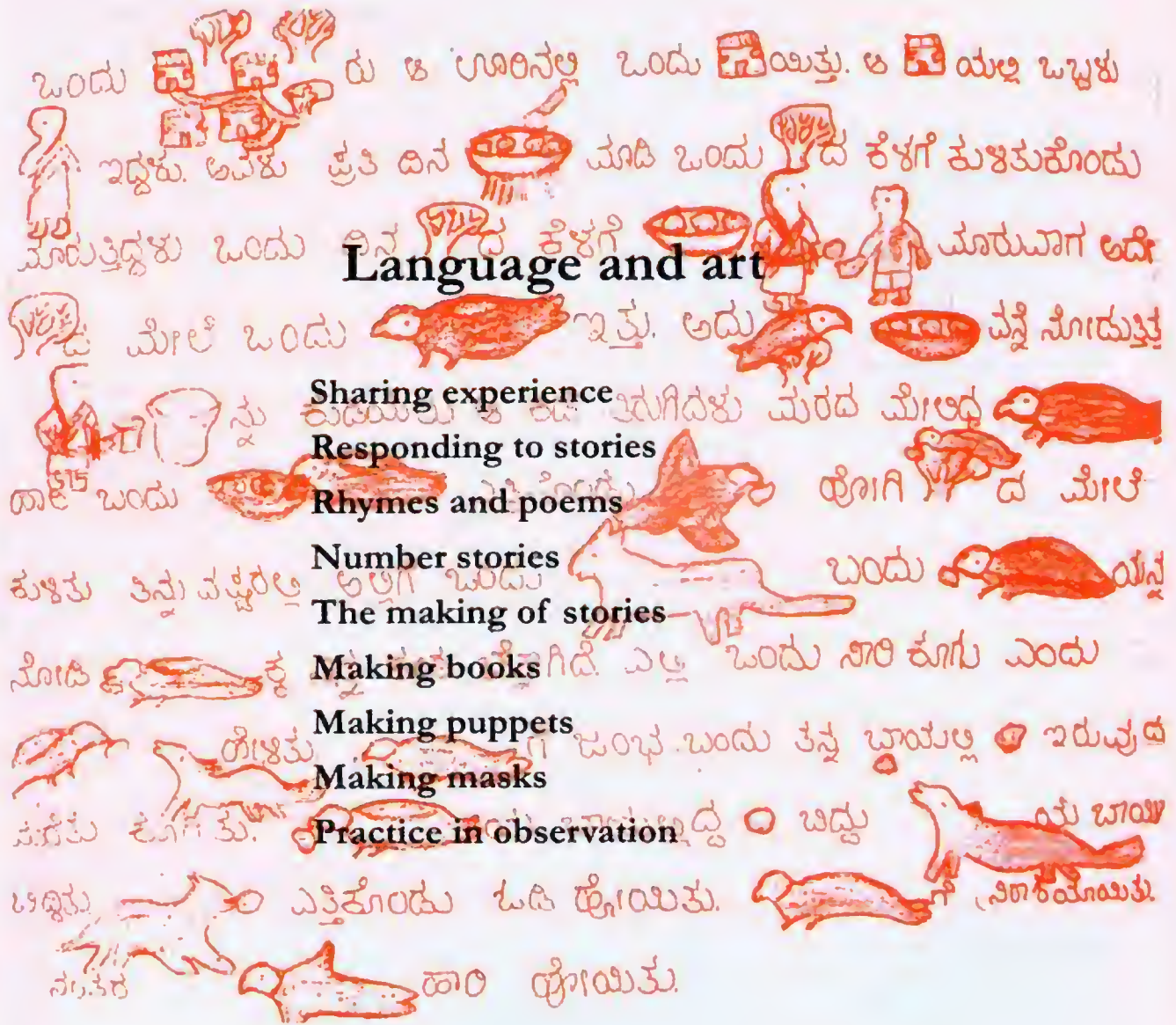
Poem and picture



A scroll telling the story of Mahabali



Story-chart made from cut-out figures



It is through language, imagination and creativity that children learn to represent experience symbolically and so are able to express and share their thoughts and ideas with others. Language includes not only the spoken word but also the visual language and the two are closely linked. Drama, puppetry and the telling of stories are clearly where the word and the image come together.

It is almost impossible to imagine our lives without stories. Without them something basic would be missing in our existence. It would be like a world without colour or eating food without tasting it. Stories are woven into our daily lives whether we are adults or children and we tell or hear stories of one kind or another every day.

Stories have been told and images made over thousands of years. Story-telling is possibly one of the most distinctive ways of being human.

Sharing experience

Purpose

The child's own experience is a rich and varied source for children's written and art work. The child explores the flexible and precise language of drawing to describe significant events.

Materials and preparation

Diaries can be made from discarded one-sided paper and either stitched or stapled. (See note on materials on pp. 8-9.)

Wall newspapers can be made by using large sheets of brown paper or by painting the newspaper white and pasting child's pictures and writing on it.

Space and time

These activities require time for the child to complete them. We suggest that the diaries should be used for one lesson a week.

The wall newspaper could be prepared either on a monthly basis or once in two months.

Activities

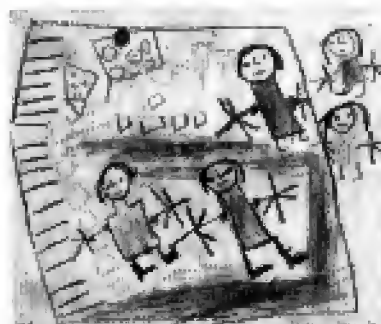
In the diary and wall newspaper, the children's own experience is used as a starting point. This helps children to bring together the different worlds of school and home. A child will naturally draw what is familiar and that image is directly related to the child's understanding and experience of the world. Similarly, the child's own words are used for the captions and this helps the child to connect the spoken word and the written word and it becomes easier to read.

For children with learning difficulties it can be particularly helpful for the child to tell and write his own story in his own words so that the gap between the spoken word and the written word, which is difficult for some children, is bridged.

It is helpful if children are encouraged to think of something personal and special as a topic for the diary or newspaper so that the drawings do not become repetitive and lifeless.



My mother didn't buy me new bangles, that's why I'm crying.



My father, my sister, my brother and I are going to my grandmother's house to see TV.



My father came to the house drunk, so my mother asked why. They quarrelled. My mother cried.

Additional activity: Older children can be encouraged to write a diary as though writing as another person or an animal. Writing in the first person and from someone else's point of view often gives a child an insight into unfamiliar experiences.

A theme based on something that is familiar to the children may be taken, such as "My Mother". It is important to discuss the variety of activities that a mother might do: combing a child's hair, cooking, grinding chutney, dressing up for a wedding, rocking a cradle, going shopping, collecting firewood, going to work etc. Each child can choose a particular subject to draw. They should be encouraged to make the mother the main focus of the picture.

Alternatively, the children could be asked to do a self-portrait showing themselves doing something they enjoy. The children could be helped to look carefully at different features such as the length of hair, the kind of dress, and also the way different actions are done.

Another theme might be birds. Again some discussion should take place and if possible time spent looking at birds so that children become more aware of the differences in them, where we might see them and how they move etc. With young children, more important than showing them how to draw is to help them to think and look at the subject and to observe and talk, building up a vivid impression of what is special and particular that they want to convey through their drawing. Similarly, with trees. The children can look and become aware of the different kinds of trees and their various shapes, flowers, leaves etc. (see pp. 78, 143-44).

Additional activities

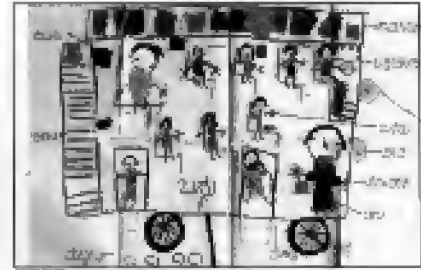
Picture dictionaries

Familiar words can be made into picture dictionaries. In this way, the children's pictures focusing on a particular theme are labelled and displayed on the wall for each other to read.

Individual pictures could be made and words written on the board, which children then use to label their picture.

Suitable themes for such charts might be: my family, my father, my mother, animals in the immediate surroundings, the bus etc.

Initially, the teacher could write the captions in clear, bold letters.



Responding to stories

Purpose

Stories are often told as part of the normal classroom teaching. Stories can be the basis for the children's own art work and expression so that the story comes alive for the child and is remembered. Children can also begin to appreciate the different ways that stories have been expressed visually, such as through puppets or masks etc.

Materials

Plain paper of different sizes. The size of the paper to be used will depend on how the story will be displayed and whether it is to be used for a book or a chart etc. See suggestions about display and ideas for making books on pp. 132-33.

Pencils, oil pastels, paint.

Some stories and poems are more suitable to be illustrated and so the selection of a story is important. It should be a story that is appropriate to the age, the interest and the ability of the class.

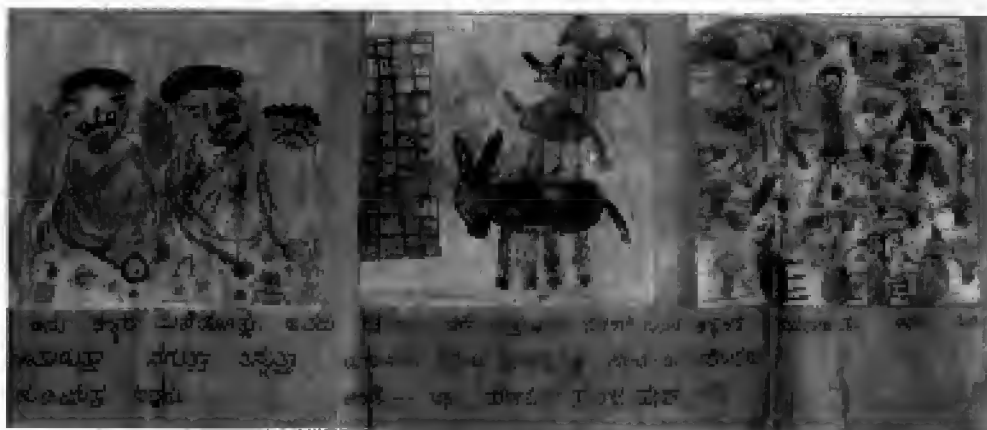
Space and time

Some stories may be extended through art work over longer periods but the children should be allowed time and space to follow through an idea.

Activity

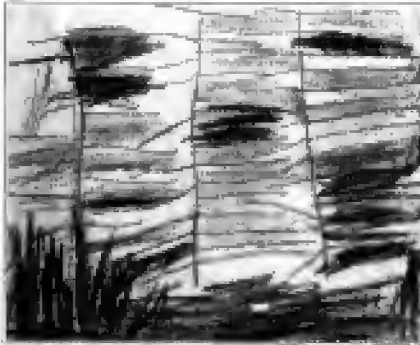
It is important to focus on particular aspects or parts of the story including both the characters and the events. The teacher can help the children not by drawing a picture on the board for them to copy but by describing the picture, with the help of the children, so that they can imagine it in their minds before they start drawing.

Such verbal descriptions help children to be attentive to detail and to draw a more lively picture. Sometimes the children can enact a part of the story or the role of a character. The children might be encouraged to think about a particular action, such as bending, running or fighting. The special features of an animal could be discussed. For example, if the story includes a wolf, the children could think about a wolf's long hair, or its sharp teeth and how a wolf moves. The landscape of the story could be discussed: does the story take place in the forest, in a village or a city?



Re-telling the story of "The four musicians"

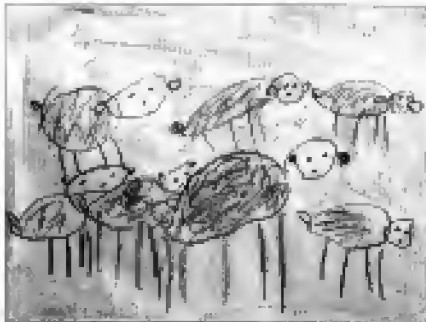
The pictures below show five-to six-year-olds' response to the story "The singing wolf and the sheep". There is no right or wrong way to draw and children hear stories in very different ways and also visualise the story in their own particular way.



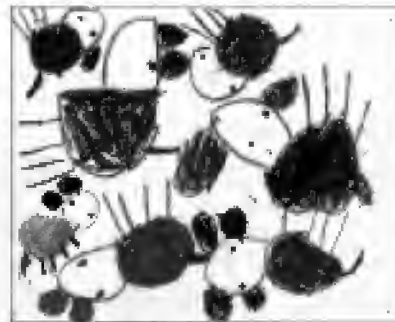
Different pictures of the forest



The wolf



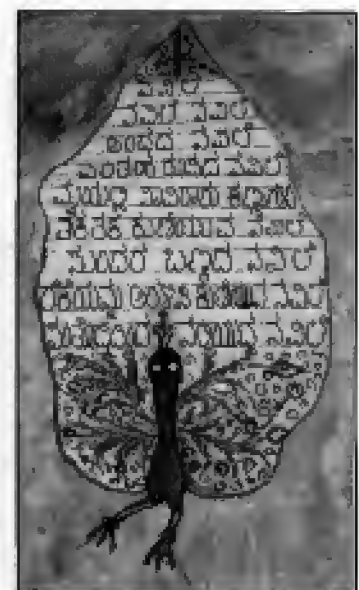
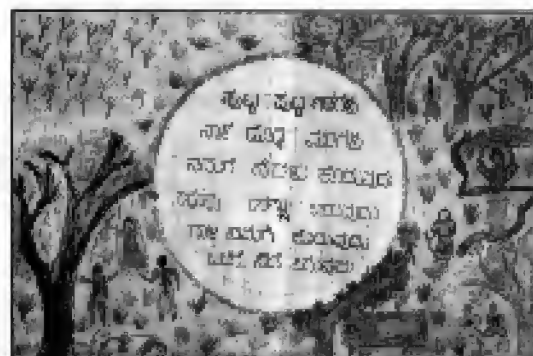
Different pictures of the sheep



The farmer

Rhymes and poems

A book of rhymes, songs and poems could be made and illustrated by the children. Initially, it may be sufficient to take just one or two lines of a rhyme and the child could write in large letters on plain paper.



Related activity: Stitching a poem (see p. 88).

Number stories

Purpose

Number symbols are all around us and most children, even in rural areas, will be familiar with the idea of numbers through their experience in everyday life: the clock, the bus number, the bus ticket, price tags etc. Gradually, the child comes to associate these written forms correctly with the numbers they have learnt orally. The suggestions below help to give meaning to written numbers and so further help children to make the correct associations.

Materials

Paper, charcoal, crayons, scissors, gum.

Space and time

A number story could be prepared over a week with different children contributing to the chart.

The number book could be made individually and added to, over a period of time, as the child becomes familiar with the different numbers through a variety of activities.

Activities

1. A number story

The children can contribute to a chart on numbers. For example, the story of one farmer who has two cows, three cats, four dogs, five sheep, six mango trees, seven hens, eight ducks, nine banana trees and ten bees. Alternatively, a road with different numbers of vehicles or a wedding procession could be done.



2. A number book 1-10 or chart

Each child makes a number book with the number in numerals and letters on one side and a picture to illustrate the number on the other. For example, one sun, two eyes, three friends, a four-legged animal, five fingers of one hand, six legs of an insect, seven eggs in a nest, eight legs of a spider, nine birds in a tree, ten fingers on two hands.

Alternatively, a child could draw pictures of things associated with four – four legs of an animal, four legs to a table, four wheels of a jeep.

Additional activity

The children can think about and draw all the different ways they have seen numerals used, e.g. a bus ticket, a telephone, a clock, car registration numbers, shoes, a tailor's measuring tape, coins and notes, a bus number or the number on the T-shirts of sports players.



The making of stories

Purpose

Many of the previous exercises include thinking about expression and accuracy in line and colour, responding to stories visually and observing the environment. These contribute in different ways to helping children feel confident to write and illustrate their own stories. The stories can be an added resource as reading material for the children.

Materials

See suggestions for the making of different kinds of books and ideas for display (pp.132-33). Blackboard and chalk could also be used.

Space and time

Often children are highly motivated when the work is directly of their own making, and interest can be sustained over more than one or two periods, if needed.

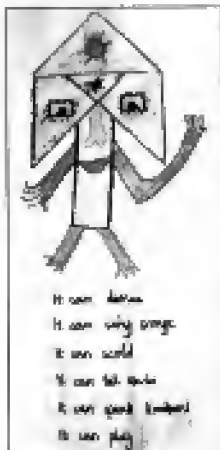
Activities

Possible starting points are:

Children can be asked to imagine the history of an unusual object such as a box, hat or bag.

Sometimes an opening line may be sufficient to help children to begin, "In the middle of the night, I suddenly heard a loud noise..."

The children might draw an imaginary animal, insect, bird or tree and use that as a basis for a story.



A magic machine



A fantastic tree



An imaginary animal



Remembering a dream

Suitable themes for imaginative pictures and writing might be:

- The day I had wings
- A magic forest
- A magic machine
- A journey underwater
- The day my head was changed for another's
- Meeting a monster
- A frightening dream
- Magic shoes
- An alien

Making books

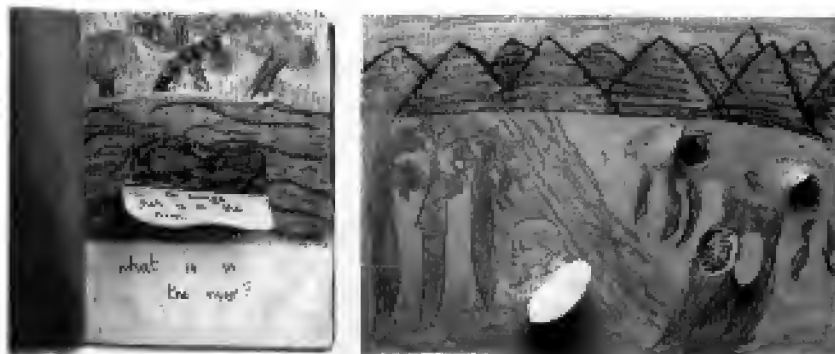
Traditional books

- Cut pages out of white or coloured paper. Sizes and shapes can vary. Fold pages in half. Leave a sufficient margin for the edges and the fold in the centre.
- Make a cover out of thicker paper or card that is a little bigger than the inside pages.
- The pages can be sewn together or holes can be punched and the book tied together with string or ribbon.



Books with flaps

Do the same as above but cut a flap to cover some part of the picture. Stick the flap over the picture and make a hinge with clear tape to cover the picture.



Zigzag books

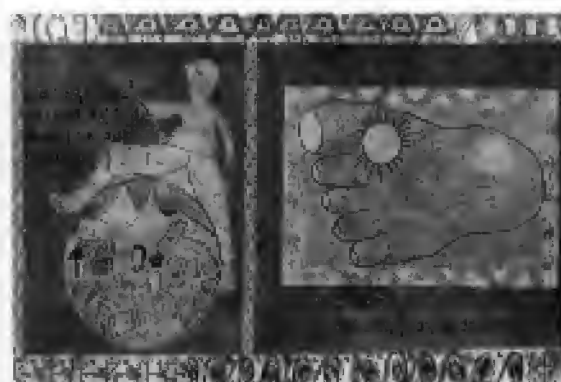


- Take a long sheet of paper or thin card and fold in a zigzag.
- Use the two ends as covers and strengthen by pasting a piece of card.
- The folded paper can be cut in different shapes such as the outline of people etc.

Note: The zigzag book can be made to hang vertically and displayed on a door.

Scrolls

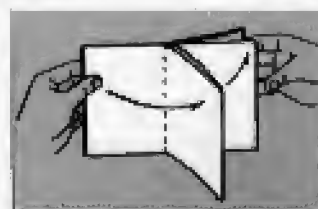
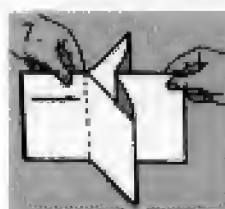
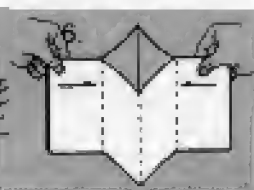
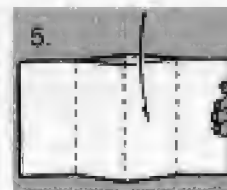
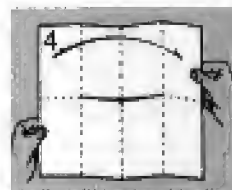
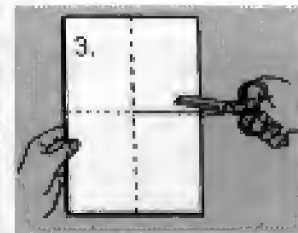
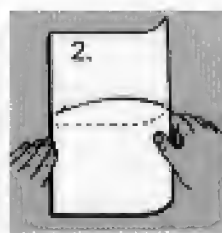
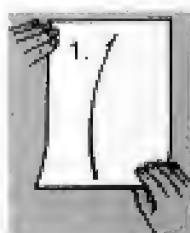
A scroll can be made by cutting several sheets of large paper and joining with paste. This can then be rolled and opened while showing. This is particularly suitable for telling a story with different children contributing pictures that illustrate the various parts of the story. A patterned border can be made to protect the edges.



Note: A vertical scroll can be made by joining horizontal sections of a book with threads and hanging it vertically.

Origami books

1. Take a paper folded in half, width-wise. Fold it once again in half width-wise and open out.
2. Now, fold length-wise and open out again.
3. Starting from the folded edge as shown in figure 3, cut along the crease. Stop where the fold lines intersect.
4. Open the paper completely.
5. Fold it in half width-wise.
6. Push the left and right edges to the centre to form an opening in the middle.
- 7.8. Wrap around any two sections to make an eight-page book. Trim the three open edges.**



Making puppets

Cone puppets

Make a cone from card and staple.

Add facial features and arms from waste coloured paper, thread and bits of cloth.



Pop-up puppets

These puppets are made from a ball of crumpled paper for the head that is covered with scrap cloth and attached to a stick. Facial features are added using waste materials.

An inverted cone is stapled to the costume which can be made from an old cloth piece (see p. 124).

The figure can be moved vertically by the stick.**



***"Kum-kum battalu"* puppets**

Using the base of the paper toy made by children that is called *Din aur raat* in some parts of the Hindi-speaking belt and *Kum-kum battalu* in Karnataka, paste two opposite sections to form a mouth.

A variety of puppets can be made by adding facial features made from different kinds of materials.**



Stick puppets

- Cut out two identical figures on card.
- Colour them to form the back and front of the figure.
- Paste the two figures together round the edges, leaving a space for a stick to be inserted.
- Insert a bamboo stick between the two layers and secure with tape.**



Making masks

Paper mask

Cut a strip of thick paper or thin card, approximately 20 cms. wide and long enough to put over the head. Leave a margin for fastening.

In the centre of the strip draw or paint a mask. If required, add fibre, thread, string etc.

Draw a curved line at the bottom so that it will rest on the shoulders.

Shape the bottom and the top of the mask to make a head.

By first folding the card in half, features such as the eyes, nose and mouth can be cut and painted or decorated forming symmetrical features.

Alternatively, the mask can be made as above with white paper which is folded and cut. The face is then glued on to a background of coloured card.***



Pâpier maché masks

Balloons, waste electric bulbs, paper plates or clay balls can be used as a base for building up papier maché masks. Layers can be placed to create a strong framework and then features can be added by using pulp. If necessary, after the mould is dry, cut through the newspaper layers in half to remove the interior object. Place the hollowed halves together again, sealing the edges with a further layer of newspaper.

The mould can be painted and then varnished

Natural materials such as leaf plates or coconut fibre can also be used as a base.

Practice in observation

Purpose

To help the children develop the ability to look closely at details and observe natural or familiar objects.

Materials

Paper, pencils, oil pastels and black paper, if available, for using with white crayon or oil pastels.

Activities

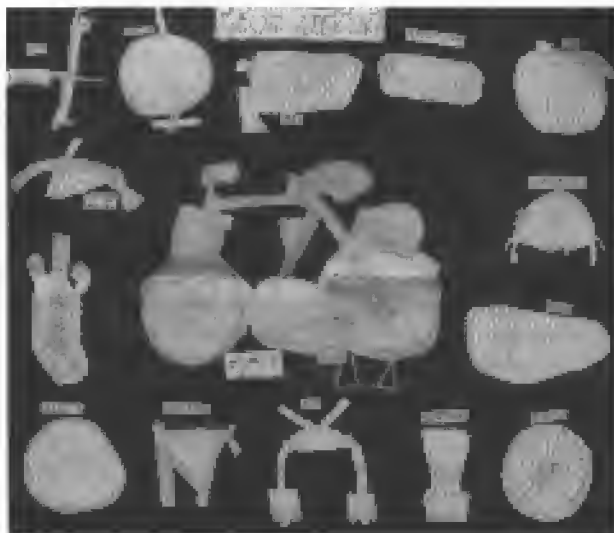
1. Ask the children to find a thing or a part of a thing that they want to draw that is in the garden. Alternatively, a group of three to four children could be provided with a part of a fruit, vegetable or flower; for example, a cut section of a cabbage, an onion cut in half or roots.

The children could first be asked to look at the colour, lines and texture of the object carefully and then to describe it. They could then be given about 10 minutes to draw a section of the object. Three different objects could be drawn in this way and each within a limited time. Then, they could look at each other's drawings.

2. Choose a familiar object such as a bicycle, a harmonium or a kerosene stove. Arrange the object so that it can be seen clearly by all the children. If necessary, arrange two or three objects and let the children sit around the objects.

First discuss the object with the children, asking them to look at the different parts and notice what they are made of, how they are joined and what they feel like to touch.

The children can then draw the cycle and its different parts.***



Note: This work could be followed by language work where the children write descriptions of different objects that they have closely observed as though for a blind person or to an imaginary person from another planet.

Links across the curriculum

	Language	Math	Science
Senses	Vocabulary related to sensory experience: taste, texture, shape, colour and pattern, movement. Sound and rhythm. Word and image.	Time. Calendars. Sorting, matching and comparing exercises - according to texture, sound, colour and shape.	The sense organs.
Line and Colour	Writing patterns. Decorative writing.	Patterns and designs.	Changing colours. Exploring materials through markings.
The elements	Imaginative clay modelling. Listening and responding to stories and myths. Vocabulary related to clay work. Poems and description of seasons.	Clay models of shapes and forms.	Qualities of clay. Floating and sinking. Water and other materials. Constructions that fly.
Exploring materials	Following instructions for craft activities. Discussion on materials and their qualities and usage.	Mobiles with shapes.	Parts of plants. Changes in living processes. Identifying trees. Materials and their properties.
Patterns	Pre-writing exercises.	Pattern and shape. Geometrical constructions. Counting activities.	Sorting activities with natural materials.
Shapes	Vocabulary of shapes.	Properties of geometrical shapes. Symmetry. Constructing two- and three-dimensional shapes. Tessellations.	Body outline.
Language and art	Creative writing through diaries, wall newspapers, shared stories. Extending vocabulary through picture dictionaries. Rhyme books. Imaginative writing. Descriptive writing and observation.	Measurement making books. Number stories.	Close observations of the parts, shapes and functions of objects.

Environmental studies	Dance and movement	Craft
Seasons. Sensory mapping. Experiencing environment through senses.	Movement and balance.	Clay modelling. Rubbings. Pattern making. Collage. Drawing and painting.
Beginnings of mapping. Colours in the environment.	Curves and straight lines in movement.	Mixing colours.
Landscapes. Animal habitats. Sources of water. Impact of seasons. Uses of clay. Houses. Food and "How cooking began". Festivals.		Construction of models. Illustrating stories. Mobiles. Drawing. Marbling paper.
Sources of materials.		Printing. Collages. Stitching. Basic skills in paper craft.
Patterns in the environment.		Printing. Pattern making.
Observing shapes in the environment. Looking at buildings.	Making shapes using the body.	Rangoli. The tangram. Three-dimensional shapes.
Sharing news. Family, village experience. Description of events and issues in the neighbourhood.	Drama with stories.	Making books, masks, puppets.

Topics for discussion with teachers

Self-evaluation

The purpose of art in education

Making the school a beautiful place

Different methods in the teaching of art

Are all children good at art?

Self-evaluation of the teacher's effectiveness in supporting children's art activities

These are some of the questions that teachers can ask themselves while working with children:

1. Are we supporting the different ways in which children work?
2. Are children encouraged to do their own work and not copy or imitate others?
3. Are children given time to finish their work?
4. Are children encouraged to talk about their work?
5. In what ways are children helped to be more aware of and notice things of interest in the environment?
6. Are children encouraged to experiment with a variety of materials?
7. Are classes structured to provide freedom within a framework?
8. Are ways provided for children to relate their art work to other areas of learning?
9. Is a situation created whereby all children can participate?
10. Are possibilities provided for creative and artistic activity for children with special or different needs?
11. Are boys and girls given equal opportunities to participate in practical activities?
12. Is criticism of the children's work constructive, respectful and supportive?
13. Is there a display area in the classroom or school?
14. Are all the children included in displays of their work in the course of the year?
15. Does the children's work link and connect with their experience at home, in the family and in the community?
16. Are materials being used economically and not being wasted?

The purpose of art in education

Questions

1. Why should art be taught in school?
2. What do you think children will learn by doing art?

Some of the answers teachers have given are listed below:

- ◆ The development of skills in art and craft.
- ◆ Decorating the classroom.
- ◆ To help children who are less able in studies.
- ◆ So that children can relax from their studies.
- ◆ To help them get work as designers or artists later on.
- ◆ So that children can express their feelings.
- ◆ To develop awareness of the environment.
- ◆ So that children can work with their hands, not only with their heads.
- ◆ To help children work independently.
- ◆ To help children work together cooperatively.
- ◆ To make lessons more interesting.
- ◆ To help children look at the world more closely.
- ◆ To increase sensory awareness.

Discuss in groups and decide which are the three most important reasons for art and why.

Which is the least important reason?

Do you disagree with any of the reasons given? If so, why?

Would you add any other reasons to the list of why it is helpful for children to have art activities in school?

Making the school a beautiful place

Points for discussion

How is your school decorated?

What would you do to improve it?

How could the children help to make the school more beautiful?

What makes the school beautiful?

Do the decorations help the children to study?

How often are the displays in the school changed?

Will too many decorations make the school cluttered?

Are natural materials used to make the school a more interesting and attractive environment?

What materials can you find in the local surroundings to decorate the school?

Activity

Make a monthly plan to discuss with the children how to make the classroom a more stimulating and artistic environment.

1. A display/exhibition

Think of an idea related to materials for a display and how you would link it to another area of learning.

Where would you put it?

Who would arrange it?

Would it change over the month?

How could you use it in the class?

How would the children be involved?

What is your role as a teacher in developing a display?

2. Floor space

Think of different ways that the floor space could be used.

Which area of the floor could you use?

What materials would be needed?

How could the teacher support the children in making designs on the floor?

3. The wall space

What kind of boards or screens could be used?

Where could the boards best be placed so that they are visible?

Could you cover the board to make a more attractive background, e.g. matting, hessian, kite paper?

How could the children contribute?

Where could you find suitable pictures?

Does the work on the board tell the children something new?

Think of a theme such as people doing different kinds of work, wearing different clothes or playing games. Plan how you would guide children making pictures on that theme. Where would you look for other pictures or materials related to the theme?

Make a plan of how you would arrange the pictures, titles and labels and how you would make an attractive presentation. Think of ways that the display could be used in the class.

Different methods in the teaching of art

There can be all kinds of art teaching: lessons where something is put on the board and the children are asked to copy it into a ruled notebook; lessons where a topic is given, the children draw and the teacher gathers the drawings without comment; and lessons when the teacher gives a drawing for children to colour. So there are all kinds of drawing lessons and it is important to reflect on why we are doing it and how we can succeed in achieving that goal.

Below are three different ways of teaching a drawing lesson about trees for second standard children. Analyse each of these methods with the help of the questions given and then decide what your approach would be in teaching a class on birds and how you would do it.

Method one

The teacher has prepared the lesson carefully and organised the materials. Each child has a plain piece of paper and a pencil. The teacher draws an outline of a temple tree on the board and asks the children which tree is on the board. The children are then told to copy it. The teacher goes around the classroom and looks at the children's work. Some children are praised. The teacher shows others where their pictures are not correct and they rub out certain parts and do it again. A few children are asked to start again. The class ends when the bell rings. The teacher collects the drawings. Later, the children are awarded marks on neatness and accuracy. The pictures are not used again.

Method two

The teacher asks the children if they have seen a temple tree. She then tells them that the class today will be about temple trees and they will observe the tree and then make a picture of it.

The teacher accompanies the children outside and they stop by a temple tree. She asks the children to look at the shape of the tree from a distance. Then they look closely at the branches, flowers and leaves. The teacher asks them where they had seen other temple trees.

One child says that he had seen a temple tree on the way to school but it had red flowers. Another child says that he had seen an old temple tree near a temple. A third child says that she had seen a temple tree in the courtyard at home.

After some more discussion about their memories and observations of the tree, and when each child has built up a picture in their mind, the children go back to school and draw and colour a temple tree.

The teacher allows some time for the children to begin their pictures and then goes around the class looking carefully at the children's pictures. She notices whether the children are engaged in their work. She may ask questions or make suggestions that help children to visualise a picture in their minds.

The teacher avoids giving detailed instructions or “improving” the child’s picture. Instead, for example, she says, “Did you notice what kind of pattern was on the bark?” or “Were the flowers only one colour?” Or “How does the shape of a temple tree look different from the mango tree?” Or “Which birds and animals would you see near the tree?”

The art class is the last lesson of the day, so when the bell goes, some children ask if they can continue to draw their pictures. Some children ask if they can take their pictures home to finish. Some children have already finished. Next day the children paste their pictures on the cover of one of their books.

Method three

The teacher gives paper and colours to the children. She says that they children can draw a tree. Some children begin to draw but others look uncertain and do not start for some time.

The teacher goes around the class. She comments on some children’s work who have begun their drawings with some confidence. She does not comment on some children who have not begun. She talks to a few children and encourages them and says they are doing good work. Some children begin to copy from each other and many of the pictures are similar.

The bell rings and the children finish their work. The teacher chooses a few of the good pictures to display on the wall.

Analysing an art class

The analysis of an art class can be based on the following questions:

- ♦ Has the teacher prepared and thought about the topic before the lesson?
- ♦ Does the teacher tell the children what the lesson is about?
- ♦ Is there some discussion between the teacher and the children?
- ♦ Does the teacher ask open questions (i.e., questions that have many possible answers)?
- ♦ Does the teacher ask closed questions (i.e., questions that have only one right answer)?
- ♦ Do the children share their experiences and observations?
- ♦ Does the teacher expect one solution to the task?
- ♦ Does the teacher expect many different solutions to the same task?
- ♦ Does the teacher allow for differences in styles and approaches?
- ♦ Does the teacher limit the time for working? Can the child spend more time to complete the work if needed?
- ♦ Does the teacher allow for different paces of working?
- ♦ Are the children’s pictures all the same?

- ♦ What is the teacher appreciating in the child's work?
 - Neatness?
 - Originality?
 - Concentration?
 - Effort and interest?
 - Imagination?
 - Accuracy?
 - Carefulness?
 - Expression?
- ♦ Will some children feel dissatisfied at the end of the class?
- ♦ What did the child learn from the activity?

Discussion

With the help of the questions above, discuss the three methods of working and think about the positive and negative aspects of each method.

Activity

How would you prepare, teach and assess an art class on the theme of birds for children in the second class?

Are all children good at art?

Introduction

An elderly woman who is now in her eighties explained how she had studied at Shantiniketan in Bengal. One day she said to her teacher, "What colour should I put in my picture?" The teacher replied, "I could tell you but then it would be my picture. If you choose the colours that you think are right and fitting, then it will truly be your picture."

Years later she remembered this incident when her great grandchild asked her a similar question and she recalled what a deep impression this teacher's remark had made on her.

This story shows how important it is for children to draw their own pictures and not to depend always on other peoples' instructions. Children do imitate and learn from each other but the child should not feel under pressure to make the picture that is in the teacher's mind. There are many ways of drawing and painting and it is important for the child to be supported but not dominated by the teacher.

Discussion

Is art for all children or only for the very gifted?

Is art for children who are weak in studies?

Why might some children dislike art? How could the teacher help the child to enjoy painting again?

Can a picture be wrong?

Activity

Look at the pictures of how children have drawn a bus/a person/a cow (see p. 19).

How have they found solutions to express their ideas?

Is a picture right or wrong?

How do we judge the children's pictures?

Is the picture lively?

Is it copied?

Does the picture look like what the child says it is?

Is the picture like the real object?

How is a painting different from a photograph?

Look at the pictures for unusual and original ways in which the child has expressed his ideas.



Teachers engaged in workshops

Appendix I

An introduction to art in the life of young children

A small baby's power of concentration and sense of purpose as he explores the world around her is amazing. The baby uses all the senses she has to make meaning of this world of impressions. Taste, touch, smell are probably the dominant senses for a newborn child. However, quite soon, within a month to six weeks, the baby's blurred vision clears up and she is able to identify the shape of a face. She also begins to distinguish the parts of the face and trace moving objects. The small baby also starts trying to make sense of the mystery of things appearing and disappearing. Sound, sense of warmth and space also play an important part in helping the baby to interact and relate to the people and things around.

As the baby grows, everything and anything within sight, hearing or touch may light up a spark of interest. Her own fingers and toes are very absorbing to the young baby. Ordinary things such as the patterns created by moving leaves in the morning sunlight or a cat's playful movements can be a source of delight. Such things go largely unnoticed or are ignored by us as adults but for the receptive baby, these experiences open up possibilities for learning.

As the baby grows further and is able to grasp things that are around, she is able to investigate things more closely. A baby may, for example, examine a thrown away cardboard box from every angle. The baby may try to suck or bite it or through touch feel its shape and texture. The baby may try to do things with the box: for example, throw it or squash it or even explore the sounds it might make.

The growing baby uses all the means available to relate to and understand the world. By about eighteen months the baby acquires greater motor coordination and begins to extend her world by making impressions or markings with whatever is at hand. It might be through a chance happening that the baby purposefully uses fingers and hands to explore spilt liquids and may even apply the substance on her own body to see the effect. The child might even experiment making marks on a malleable surface, such as mud or sand, with the help of a stick. If a young child of two years is provided with paper and tools, she too will make markings that demands physical skill and bodily movement. These actions are not mindless but a continuation of the effort to make sense of the world by the best means available to the child. It is through these first sensory experiences that the child begins to have not only a sense of the material world but also discovers a relationship with external objects. The senses include the physical senses of sight, taste, smell, touch and hearing but also a sense of spatial relationships and of contact with people.

In a young child, it is not easy to separate bodily movement from activity. If you watch a baby of five to six months, you will notice that the baby seems to laugh with its whole body from the toes to the eyes. Likewise, when a child begins to draw, the dominant impression may be the strong muscular involvement, but the child is possibly engaged at many different levels including sensory perception, logical thinking and inter-personal exchange.

The natural growth into the world of art through the child's different senses can be supported by parents and teachers if they are made more aware of both the individual differences and the universal patterns that are characteristic of the ways children experiment with line, colour, movement, texture and shape. The links between gesture, movement, language and visual image are being more extensively explored. The way a child learns about the world involves all these dimensions. There is a very close link for the young child of four or five between the image and the word. It may be noticed that a young child gives almost a running commentary on what she is doing while drawing a picture or constructing models with blocks. The child may add expression through elements of gesture so that word, movement and image come together quite naturally (see Appendix II).

Language in a way helps a child to organise her drawing and the drawing in turn helps extend the child's language. The child's drawing or modelling or pattern-making are different but related ways of making sense of the world. They offer the child a visual language to explore ideas and share experiences. In this way images make thoughts visible and help us to understand the way in which thought processes evolve.

The development of children's drawings

It is important to note that while we can see similarities in the ways children develop their drawing, there are also clear individual differences. Secondly, it is not a linear development whereby children evolve from one stage to the next as they move from mechanical, mindless scribbles towards a "correct" visual realism. There are elements of randomness and chance in a professional artist's work too and there are elements of thoughtful, deliberate markings in a young child's work. An increase in control and skill does not mean that the artist loses spontaneity and flexibility. However, a number of studies of young children's drawings do show common elements in the way children develop their pictures.

The adults who accompany children in their artistic activities should know what is and what is not reasonable to expect from children. In the process of drawing, painting and modelling, young children are not only gaining motor control, developing hand-eye coordination etc. and improving their skills with different materials, they are also developing ideas as a way of understanding the world in a pattern that is unique to each child. The way a young child learns to crawl, stand and walk is on the one hand universal, but on the other hand each child will find her own special way to master mobility (see *Growth of the child through art*, pp. 1-4).

Picture and word

Desmond Morris wrote a book called *The Biology of Art*, which is about the paintings of chimpanzees. It records in detail how, given the right support and encouragement, chimpanzees can become skilled and accomplished artists and are able to apply colour and draw lines to compose well-balanced and harmonious pictures, in many ways comparable to a young child. However, the great difference that Morris notices between the chimpanzees' pictures and the imaginative work of a child is that the chimpanzee never seems to reach a point where he himself recognises an element of representation of people and things in the pictures.

The child at some point, usually between two to five years, begins to name the sketches she has drawn. At first, the pictures may not look very different from the unnamed sketches and the adult looking at them may not easily recognise everyday objects, animals or people. However, this is a significant breakthrough in the child's development.

The child's discovery that there is a kind of language that can be shared through visual representation is an exciting moment. The possibility of sharing a whole world of story has opened up.

This stage cannot be accelerated by asking children to copy other people's drawings of life-like objects but the adult does have an important role to be accepting and uncritical of the child's work and being a sympathetic listener and observer. It is not explicit teaching but supporting and sharing the child's growth that is needed at this particular juncture. If the teacher tries to force the child to copy pictures at this early stage, it would be like trying to teach grammar to a small child who is just on the brink of talking and has not quite framed sentences but is nevertheless highly motivated to communicate.

Towards representation

The child's first pictorial representation is often a human being (see pp. 2-3). Children are inevitably affected by each other and the prevailing cultural expression of visual language. There is a natural kind of borrowing and sharing of symbolic language. However, there is an important difference between, for example, a child who spontaneously adds a facial feature because she realizes something is missing and when the teacher insists that she change or complete her picture because to the adult it seems imperfect or unfinished.

If children are given freedom with materials, space and time to experiment, gradually they develop their own particular symbols for representing the human figure, the house, the tree and familiar animals etc. There is an infinite variety in these expressions and the pictures change and are modified as the child absorbs and integrates new information and experiences.

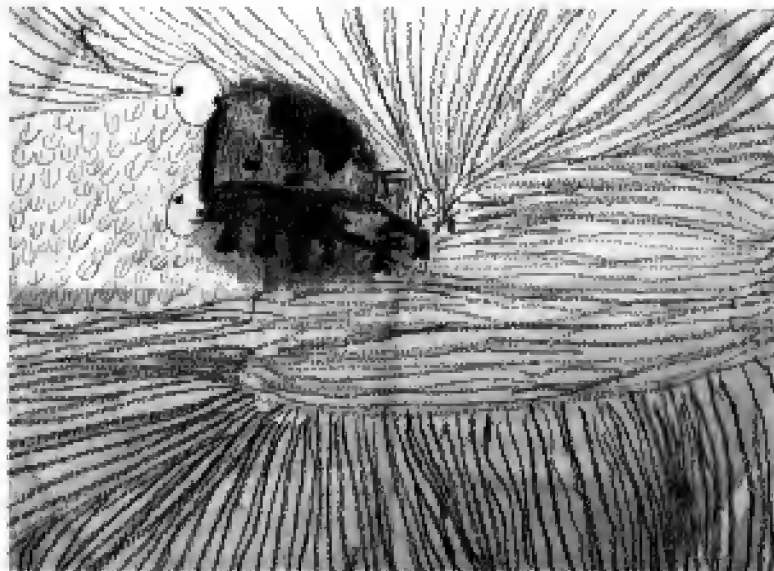
Colour, space and form

Some writers have suggested that children's drawings are subjective and are in response to feeling, rather than objective and coming from observation and so in this way are different from an adult's pictures which try to be more realistic. A difference between seeing the externals and knowing the essence or the shape of an object from the inside has been noted. Scientific and artistic enquiry both demand imagination, reason and emotional involvement. Creativity is marked by originality but this does not mean that each child has to find something startlingly new, like changing fashions. However, it does mean that the child has to reconstruct what she experiences through her emotions, senses and intellect in order to express it. This process is a way of seeing and understanding that is particular to each person.

Children's drawings have been classified in various ways. These include pictures that are more expressive of feeling and others that are more analytical and concerned with facts. However, it would be true to say that both children's and adults' drawings include a very wide range of styles and



The cobbler (drawn by a six-year-old)



Ploughing the land (drawn by an eight-year-old)

that each kind of picture in its own way is a blending of feeling, observation, imagination and fact. Mature artists at different times and in different places have approached their paintings and sculptures in many ways and photo-realism is only one kind of representation.

Often pictures drawn by artists are not meant to be like a photo and are not only about the externals of something. If children are given freedom, their pictures bring together what they see outside and what they feel is inside, in an uninhibited and spontaneous way. Children are unaffected by convention that assumes the sky is blue, trees are green and the sun is yellow and freely use colour as they think is appropriate.

Similarly, a child evolves a sense of spatial relationships in a particular way. A child's first drawings may be composed of seemingly disconnected and unrelated units. Very gradually the child explores different ways of depicting relationships between things and people but there are many ways of doing this.

Pattern making

It may be noticed that sometimes a young child will pretend to be reading or imitating writing by filling a page with rows of markings (see p. 38). This is an important way of understanding that writing has a purpose and a meaning. On one occasion I was observing a three-year-old absorbed in filling page after page of an old diary with evenly spaced and carefully formed markings. She told me that she was "writing". I asked her if she was writing a song but she solemnly told me that it was a secret and that she couldn't tell me.

The link between patterns and writing seems a very natural one and something a teacher can encourage a child to explore. Children may already be familiar with the loops and lines of *rangoli* patterns. By the age of five to six, children can experiment with straight lines and curves both

through movement and through drawing. Such an activity would be an extension of the earlier play with line, movement and rhythm. There would still be an element of play and experimentation and there should not be pressure on the child to achieve correct and perfect forms. At the same time an atmosphere of concentrated attention and care should be fostered.

The teacher's role

The teacher's role, in encouraging the child in artistic expression, is a vital one at every stage. It is important for the teacher to understand what is helpful at different ages. A teacher may have a discouraging and negative effect if she is not supportive of the child's own growth. Efforts to improve the child's work, for example, by asking her to copy stereotyped pictures or fill in drawing books or do ready-made projects designed by teachers, may only inhibit the child and make her dependent on the adult. The child begins to think she has nothing of value to offer and can only wait for guidance to be shown how to do something.

The sensitive teacher, while valuing the child's work, is more concerned with the process than the product. The teacher who is anxious that children produce attractive but uniform pictures or craft items is likely to limit and hamper the child's spontaneous and natural urge for expression. Children's development follows different paces and styles. It is important for the teacher to recognise and respect the needs of particular children according to their temperaments, experiences and emotional and intellectual growth. It is a time for experimentation and not rigidity or an over-emphasis on skills.

The adult's function at this stage is to provide space and materials for these activities and to be a responsive and sympathetic listener to the child's sharings. As the child gets older, the teacher also has a role in stimulating the child's imagination through a story or a poem or by suggesting a topic that draws on the child's experience of school, home or festivals etc. On occasion, it might be appropriate for the teacher to challenge the child who has become withdrawn or static by opening up new possibilities that are exciting and interesting to the child.

Appendix II

An example of how picture and story come together

In a classroom it would not be easy or practical for a teacher to give time to individual children and to listen and write down their stories. However, I give an example below to show how much thought and care sometimes goes into a child's picture.

The adult looking at a child's picture could hardly guess how much thought is there behind the picture.

Below is a picture and story created by a girl of 4 ½ years (see the picture in colour on p. 124).



As the picture was drawn, the child described partly to herself and partly for my sake what the picture was about. It was like a commentary. The day before she had seen a dead shrew and had helped to bury it in the garden and the week before she had looked at a story with a witch in it. The story weaves many elements together drawn both from her actual experience of things and indirectly from books and the information she had gleaned from a variety of sources.

It was particularly interesting to see how she incorporated "writing" into her picture and how the story and the picture evolved together.

Here is how the commentary went:

(Drawing a large circle) *Here is the witch's tummy.*

(Drawing another circle) *And here's her head and her mouth. It's like that because she covers it to hide it.*

(Drawing the shrew) *This is the shrew...*

(Drawing a brown line around the shrew) *Here is it's basket.*

(Colouring the area orange) *This is the orange blanket. The witch gave it...*

(Returning to the witch and colouring it) *The witch's clothes are red and her hair is green; it goes round and round her ears.*

(I asked if there were any other people there and was told) *All the other people have gone out shopping. The witch has asked them to bring a hundred things, so they won't be back till evening.*

(Doing a series of squiggles to represent letters) *Here is the witch's spell. Shall I read you what it says?*

(Pointing to the "words" and following the lines she reads the passage from left to right) *Eat every bit or you'll be given a kick.*

(Going over the writing in yellow) *This is the paper. The witch has hung it up on the wall from the roof. The witch is so tall she can reach the roof.*

(Drawing brown lines) *Here are the witch's shelves. They're very deep and dark.*

(Adding black vertical lines) *Here's the darkness.*

(Pausing, she said) *Do you know what? The shrew helps the witch. There's another room. There's a little door which he can go in and out of. He slides down on the other side but he can see in the dark, and knows where everything is.*

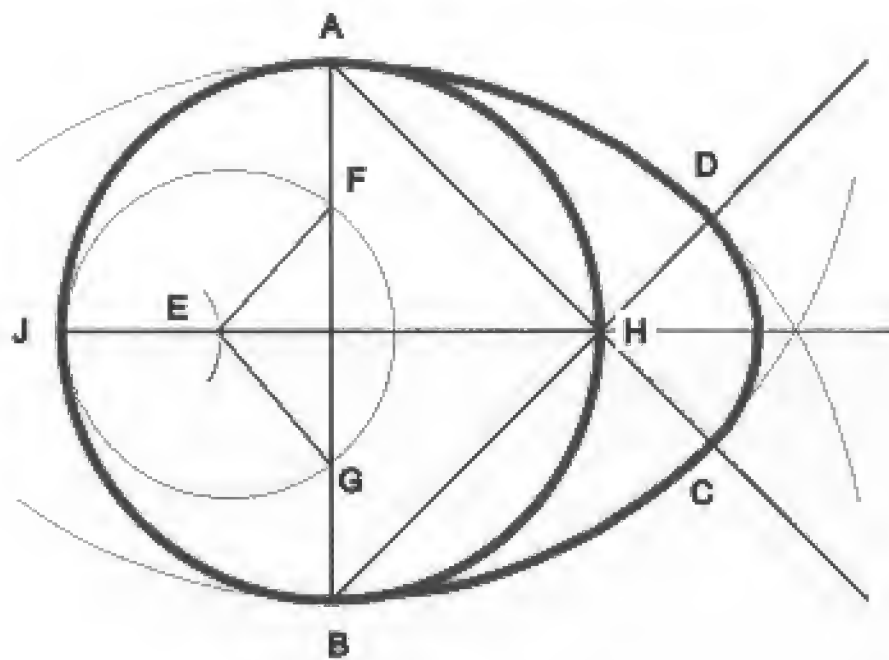
(Adding blue patches) *Here are the things to open and shut the shelves. The witch and the shrew are very careful. There is a lot of treasure there and the witch has a friend there. He's always there. He opens the shelf very slowly and reaches for the things in the night.*

(At this point she stopped and enacted how the friend of the witch repeatedly bends and lifts the things and she made the sound he makes) *He puts them in a basket. There are sweets and dolls. WHEEEEEEE! He (referring to the witch's friend) has many friends. It will take one full year to see all his friends.*

(Filling in spaces with blue colour) *Now I'll make some water for the witch and the shrew to drink. The witch's friend helps the witch. He has a lake and stores the water. When the witch's water is finished, he brings her more.*

Appendix III

Constructing the Magic Egg tangram



You will need a ruler, a pencil, and a compass.

1. Open your compass so that there is a distance of 5 cms between the point and the pencil. Draw a circle.
2. Draw two lines across the circle through the centre of the circle, so that the two lines meet at right angles at the centre. These are the lines AB and HJ on the diagram.
3. Draw a straight line (with a ruler) from point B through point H and carry the line on for about 5 cms.
Draw another straight line from point A through point H and carry on for about 5 cms.
4. Put the compass point on A and open the compass until the pencil is on B. Draw part of a circle upwards from B until you reach the line drawn from A through H at point C.
5. Keep the compass the same. Put your compass point on B and draw part of a circle upwards from A until you reach the line drawn from B through H at point D.
6. With the compass point on H, open the compass until the pencil is on C. Draw a circle.
7. Keep the compass the same, and put the point of the compass on J. Make a mark on the line HJ with the compass pencil. This shows point E.
8. Still keep the compass the same, put the compass point at E and draw a circle. The points F and G are where this circle crosses the line AB.
9. Now go over the lines which show the nine pieces of the Magic Egg so that you are sure which lines to cut. Now cut out the nine pieces and make your own birds!

Appendix IV

A note on using natural colours and dyes

Would you like to find out for yourself if there is more joy in painting with natural substances that are not harmful for your own health, and the health of your environment? If you do, you might feel that you still have links with the natural world and with your ancestors. The earliest known surviving “art works” done with paints are perhaps the petroglyphs of dots at Jinnium in Australia. Those found on the rocks at Bhimbetaka in Madhya Pradesh may be more than twenty five thousand years old. The “modern” paint industry would like us to believe that their products are more enduring than the works done by our ancestors, who sometimes went searching for miles for raw materials for paint. And considering the threats to their survival in the pursuit of “paints”, the urge to draw and paint must have been too compelling for them to resist.

When we use ready-made paints today, we’re often unaware of the source of the materials, and have no clue about the ingredients and about the impact they have on our health and the health of our environment. But we won’t go into that just now. We’ll take a quick look at some non-toxic natural substances that will allow you to paint safely and harmlessly inside homes and schools.

Colour comes from pigments that are available in some art-material outlets in powder form. (There is one in Chandni Chowk, Delhi, that sells only pigments.) Just ask for powder pigment, that’s all. The ochre and sienna and ambers come from clay. If used in a water-based recipe, it is better to slake them in water overnight. If they resist, a bit of alcohol will do wonders. You will need a mortar and pestle to grind the slaked pigment to a smooth paste, and mix some home-made acacia binder (gum) made from boiling some gum crystals (the edible variety that goes into “*mithai*”). You can boil a handful of acacia crystals in a small cup of water and cook until you get the “gum consistency”). Add a pinch of borax powder and four to five drops of glycerine. You could experiment with quantities to get the results you might want. Earth colours like ochre and ambers make more opaque than sienna. You can prepare the whole thing in a small size mortar itself, and paint straight from it. Ideally you should use mortars as bowls, so you could grind whenever the paint feels lumpy.

There may be synthetic pigments too, you could also use them, but always make sure to use a mask when dealing with powder of any kind. The glycerine acts like a retarder and helps the paint from going dry too quickly. So you can paint even with a water-based recipe at a slow pace. The borax is a good insect repellent. This is a basic recipe and you can experiment endlessly with the pigments, mixing them and changing quantities.

The one great advantage of these paints over commercial colours is this: when the paint dries up, you could still revive it whenever you want by pouring a little water in your bowl. The other advantage is that unlike the production of commercial colours, you are not left with eighteen pots of waste for one pot of colour produced. And you don’t end up hurting a water body with leftover paints from your natural pigments. But not all pigments are harmless from this point of view. Use the ones that are safer.

If you want to be able to work in your kitchen itself, where you can cook some of your colours, here are some recipes you might want to try.

The turmeric recipes

Boil a few teaspoons of turmeric powder with a small lump of alum for about 4-5 minutes. See how results vary with quantities of ingredients. You will get a very bright and transparent lemon colour, with which you can have an excellent base for a painting. If you want a granular effect, don't strain the mixture but add your acacia binder to this mixture. You will get wonderful textures.

Replace alum with *desi* washing soap, the kind you still get in *kehadli bhandars* without any animal fats. Grate some of this soap, and dissolve in water. Add turmeric. It will turn into a reddish yellow. Boil the mixture for a few minutes and allow it to cool. Follow the above recipe for different effects. Replace soap with baking soda (*mitha* or *kehana* soda) for similar results.

Paint with pomegranate (*anar*) shells and the bark of arjun

Boil some pomegranate shells in an iron pan. The longer you boil, the darker the brown you get from this recipe. Steeped overnight in the same pan, the colour will turn almost black. If you add some rusted nails, the oxide will make the black thicker and darker. Strain and use.

Replace pomegranate shells with *arjun*-bark in powder form. Any ayurvedic shop will have it. Add never-before-seen-browns to your painting kit. You can boil *arjun* in an ordinary pan.

Paint with flowers and leaves

Soak dry hibiscus flowers (the red ones) in lemon juice and leave it for a day. Boil with a small lump of alum. Mix with your *anar* and *arjun* colours for different shades. Try with other flowers too. *Palash*, *gulmohar*, roses, marigold and so on. But try not picking fresh flowers as you will harm the butterflies, the bees, and the flower-peckers. Dry flowers are just as good. Fresh *palash* flowers are eaten by cows left to fend for themselves once they have run dry.

Try the same recipe with *gilki* leaves, and other kinds of leaves too. Neem leaves with alum provide a bright transparent green. You can go on experimenting with natural colours endlessly. *Jamun*, mulberry (*shebtoot*) and wild berries can give wonderful results too. *Jamun* with baking soda will make your paintings really “live” as the colours will keep changing to your great delight.

Teji Grover

Useful books

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Credits

- Diagrams on p. 92, reproduced from Arvind Gupta, *Ten Little Fingers*, 2001, National Book Trust, India.
 Diagrams on pp. 70, 133, from Arvind Gupta, *Hands On*, 2005, Vigyan Prasar.
 Diagrams on p. 154, from *Mathematics For All*, 1988, Wiltshire Education Authority.
 Photographs of children's work from Chamrajnagar on pp. 12, 14, 15, 34, 61, 62, 76, 102, taken by Sri Shivananjua.
 Photograph on p. 70, by Imogen Sahi.
 Photographs on pp. 52, 60, 71, by Saumyanand Sahi.

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Learning Through Art

Jane Sahi & Roshan Sahi

Between the ages of two and six children discover a visual language of dots, dashes, lines, loops and spirals. As they grow older, they combine and repeat these markings to make more complex figures and patterns. These drawings and pictures give a visual form to thoughts, feelings and impressions and are a way of understanding the world.

The adults who accompany children in their artistic activities should know what to expect from them. The teacher's role especially is vital at every stage.

This book aims at helping teachers to integrate art activities into school life. Art is perceived here as an active way of learning and not as something additional to the normal curriculum. The activities are designed to include all children and enrich regular lessons of language, math and environmental studies.



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